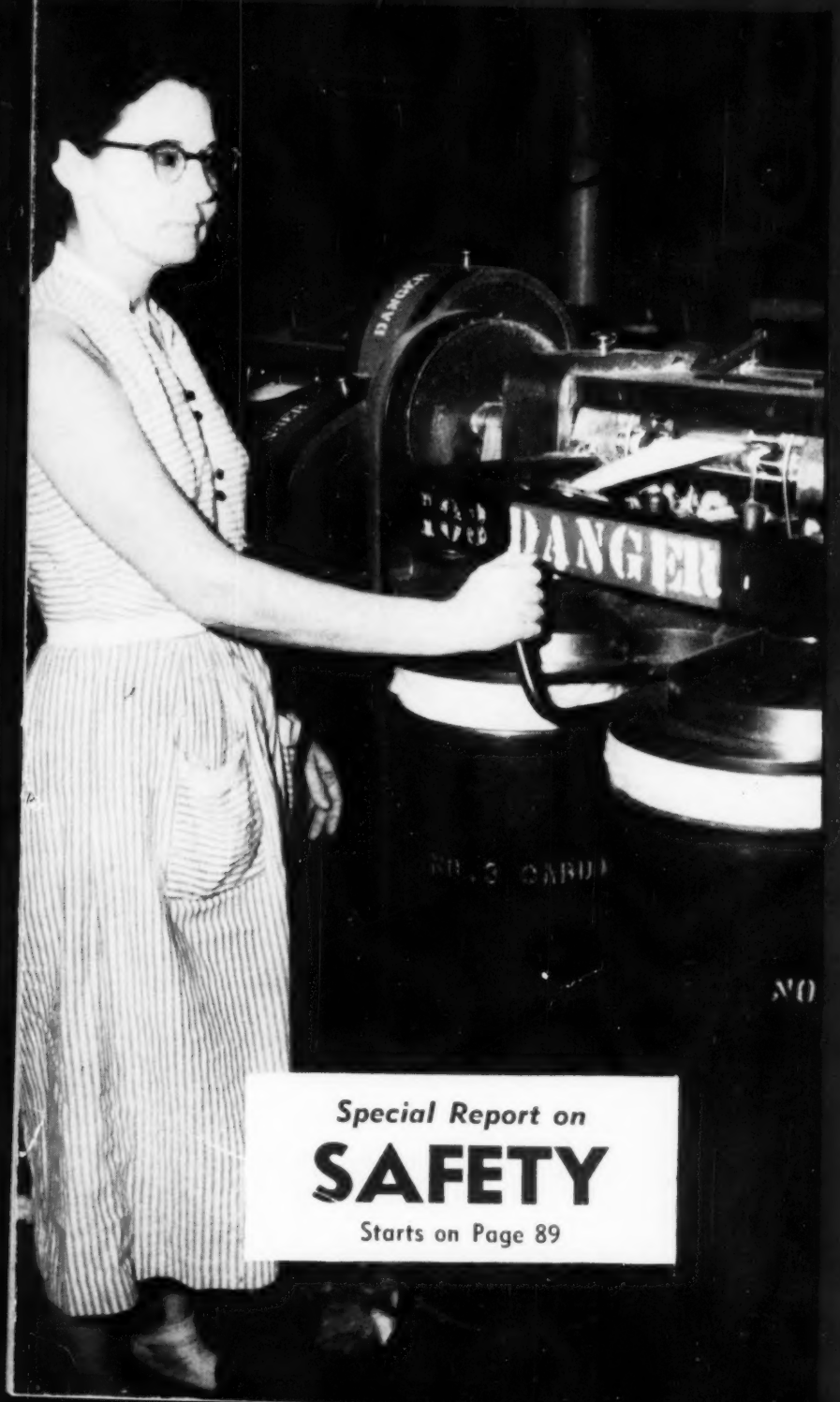
TEXTILE WORLD

A McGraw-Hill Publication ..... MARCH • 1953



Special Report on

SAFETY

Starts on Page 89

ARTICLES IN THIS ISSUE DISCUSS:

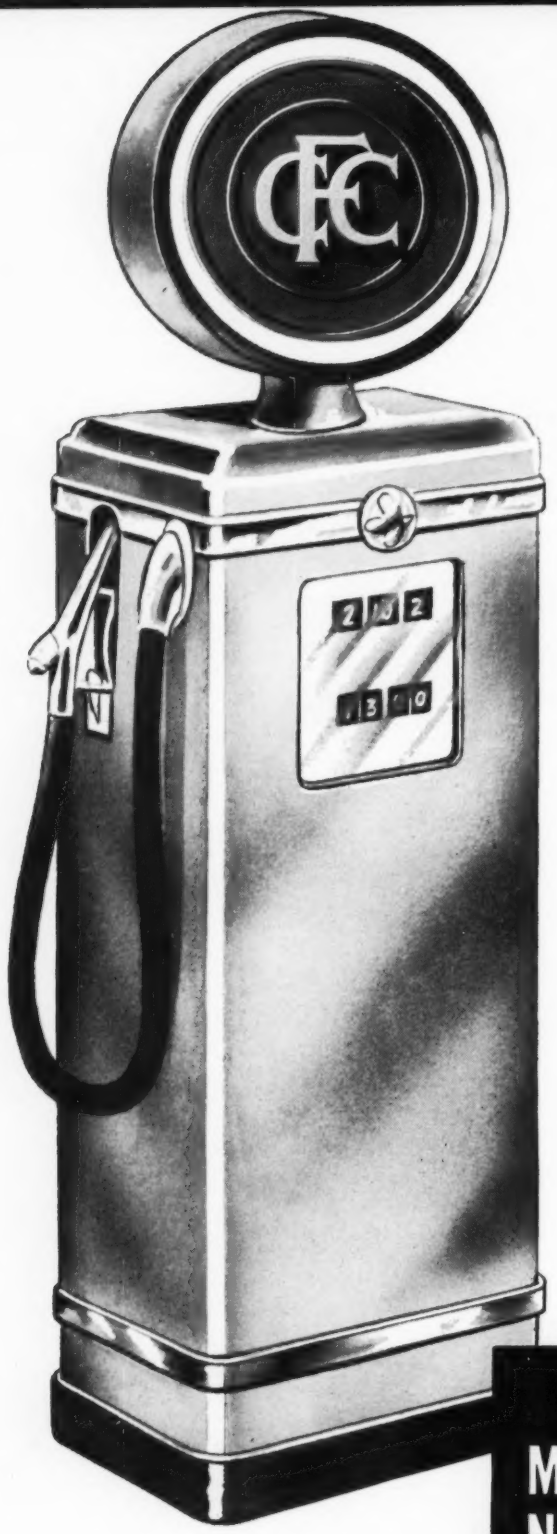
Change Is Certain (Editorial) 4
Safety 89
Can Conversion Cost $11.25 per Card ..97
What's Good and Bad About Synthetics 98
Ratios in Jersey-Tricot Fabrics 101
Quality Program Improved Lane's Denims 102
Data on Sequestering Agents 104
Answers to Five Electrical Problems .106
How To Stop Transfer Filling Breaks ..108
Knitting Crinkled Nylon 110
Improved Yarn-Grading Boards 111
Heat Survey Stops Hidden Losses 112
Worsted-Spinning Troubles 114
Three Materials-Handling Ideas 115
Circular-Knitting Hosiery Performance 116
How We Make Uniform Picker Laps ...118
Purifying Water Saves $12,150 a Yr. .121
Homogenized Size for Spun Synthetics 122
Removing Caked Nylon Size 123
Gas-Fired Boiler Pays Its Way 124
Control Vibration on Twister Spindles .125
Learn the Approaches to Group Leadership 126
Cotton Fiber Maturity and Fineness ..128
Reducing Rejects of Auto Fabrics 131
Designing With New Fibers 135
World Position of Textiles in 1952 ...139

★

PRICE 35 CENTS PER COPY

★

INDEX to ADVERTISERS
Keyed by PRODUCTS
See Page 235



Liquid Capital to power your sales

There is no doubt that liquid capital — Ready Cash — can be the high octane fuel to power your sales and put your profits in high gear.

We will be glad to furnish information on how Commercial Factors can keep you supplied with liquid funds. Send us the coupon below.

Commercial Factors Corporation

TWO PARK AVENUE, NEW YORK 16, N.Y.

MAIL NOW

Mr. J. Achelis, *President*
Commercial Factors Corporation
Two Park Avenue, New York 16, N.Y.

Please send us information describing your service.

Name..... Title.....

Company.....

Address.....

City & State.....

TEXTILE WORLD, Vol. 103, No. 3, March, 1953. Published monthly McGraw-Hill Publishing Co., Inc., (Bragdon Lord & Nagle Division). Publication Offices, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Office, 330 W. 42nd Street, New York 36, N. Y. **Subscriptions:** Address correspondence to TEXTILE WORLD—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 West 42nd Street, New York 36, N. Y. Allow ten days for change of address.

Subscriptions are solicited only from executives, engineers and technicians in textile manufacturing or finishing plants. Position and company connection must be indicated on subscription orders.

Subscription: United States and possessions, $2.00 a year, $3.00 for two years, $4.00 for three years. Canada, $3.00 for one year, $5.00 for two years, $6.00 for three years. Other Western Hemisphere, $10.00 for one year, $16.00 for two years, $20.00 for three years. All other countries $15.00 for one year, $25.00 for two years, $30.00 for three years. Entered as second class matter August 29, 1936, at Post Office, Albany, N. Y., under the act of March 3, 1879. Printed in USA. Thirty-five cents per copy.

Stronger SPURS ...Better EYES

The Draper PATENTED Recessed Spur has 50% greater holding power. Laboratory and mill have proven its greater resistance to loosening or moving off-center.

The #366 Shuttle Eye is a short First Pick tension eye interchangeable with such cotton eyes as #183-X, #340, and #346. The #366 is only one of the many Draper eyes that have been designed to meet special conditions.

Draper Sales and Servicemen can help with your shuttle specifications. Years of weaving experience will result in the best shuttle for your condition.

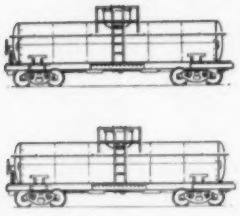
"Retaining Leadership through Research"

DRAPER CORPORATION

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S.C.

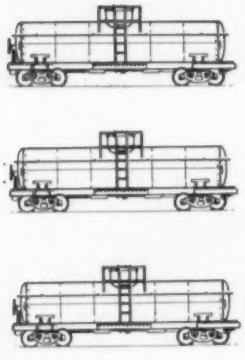
For more information, write direct or use Reader Service post card.

buying caustic soda



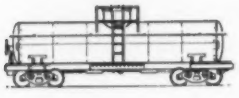
Purity was a special problem to a company manufacturing rayon and other synthetic fibers. They needed caustic that was exceptionally clear in solution and contained a very low metallic content.

to better advantage



They found that Mathieson could supply caustic to their specifications; they found in addition, certain advantages of definite benefit to their operations. Deliveries were reliable due to Mathieson's diversified production facilities. Mathieson Technical Service was available for assistance with any production problem. And, as a major producer of soda ash, chlorine, ammonia, sulphuric acid, bicarbonate of soda, sodium chlorite, hypochlorite products, and ethylene derivatives, Mathieson could furnish many of their other essential raw materials.

from Mathieson



These same advantages will be of benefit to you. You'll be sure of top-quality chemicals . . . multi-plant production facilities provide dependability . . . integrated delivery system assures on-time schedules. You'll find you can buy chemicals to better advantage—at any time—by consulting with Mathieson.

1522A

caustic soda • soda ash • liquid chlorine
sulphur • sulphuric acid • bicarbonate of soda
ammonia • sodium nitrate • sodium chlorite
hydrazine • sodium methylate • nitric acid
hypochlorite products • ethylene derivatives
dry ice and carbonic gas • methanol
ammonium sulphate

MATHIESON

MATHIESON INDUSTRIAL CHEMICALS COMPANY
Division of Mathieson Chemical Corporation
BALTIMORE 3, MARYLAND

TEXTILE WORLD

PUBLISHED MONTHLY

A McGRAW-HILL PUBLICATION

Member of Associated Business Publications and Audit Bureau of Circulations

Edwin D. Fowle....*Publisher*

Greenville Staff

Prentice M. Thomas.....*Editor-in-Chief*
James H. Kennedy.....*Southern Editor*
Richard B. Pressley.....*Assistant Editor*
Thomas B. Winston.....*Assistant Editor*
James H. Blore.....*Assistant Editor*

New York Staff

Richard C. Scott.....*New York Editor*
George M. Moisson.....*Assistant Editor*
Louise E. Wilie.....*Production Editor*
Gloria J. Meeks.....*Editorial Assistant*
Robert McK. Fink.....*Art Director*

E. H. Helliwell..*Contributing Editor (New England)*
H. S. Knowlton.....*Contributing Editor (Boston)*
J. K. Van Denburg, Jr.....*World News Editor*
George B. Bryant, Jr....*Chief, Washington Bureau*
Dexter Keezer.....*Economic Director*

Consulting Editors

C. Norris Rabold.....*Finishing*
Francois E. Cleyn.....*Worsted Spinning*
Gustav Zellnik.....*Woolen Spinning*
Henry D. Grimes.....*Wool Chemistry*
Eugene P. Schremp.....*Weaving*
W. C. Westbrook.....*Weaving*
R. P. Shapard, Jr.....*Knitting*
H. B. LeFeaux.....*Knitting*
William A. Newell.....*Textile Research*

William Buxman....*Manager*

W. B. Dall.....*Assistant to Manager*
Thomas Macaluso.....*Production Manager*

PUBLICATION OFFICE: 99 N. B'way, Albany 1, N. Y.

EDITORIAL AND EXECUTIVE OFFICES, 330 W. 42nd Street, New York 36, N. Y., 201 E. Coffee St., Greenville, S. C.

JAMES H. McGRAW (1860-1948), Founder.
CURTIS W. McGRAW, President.
WILLARD CHEVALIER, Executive Vice President.
HENRY G. LORD, Vice President.
JOSEPH A. GERARDI, Vice President and Treasurer.
JOHN J. COOKE, Secretary.
PAUL MONTGOMERY, Senior Vice President, Publications Division.
RALPH B. SMITH, Vice President and Editorial Director.
NELSON BOND, Vice President and Director of Advertising.
J. E. BLACKBURN, JR., Vice President and Director of Circulation.

DISTRICT OFFICES:

BOSTON 16, Ralph L. Chisholm, Dist. Mgr., 350 Park Square Bldg.
CHICAGO 11, M. C. MacKenzie, Dist. Mgr., 520 North Michigan Ave.
NEW YORK 36, Arch W. Fisher, Dist. Mgr., 330 West 42nd St.
John C. White, Jr., Dist. Mgr., 330 W. 42nd St.
PHILADELPHIA 3, H. C. Harvey, Dist. Mgr., Architects Building, 17th and Sansome Sts.
CLEVELAND 15, John G. Sabella, Dist. Mgr., 1510 Hanna Building.
GREENVILLE, S. C., and TRYON, N. C., Wm. G. Ashmore, Dist. Mgr., 201 E. Coffee St., Greenville, S. C., or P. O. Box 1337, Tryon, N. C.
WASHINGTON 4, National Press Building.
OTHER OFFICES: Atlanta 3; Dallas 1; Detroit 26; Los Angeles 14; St. Louis 8; Pittsburgh 22; San Francisco 4; London E.C. 4; Paris 7; Frankfurt; Rio de Janeiro; Buenos Aires; Mexico City; Manila; Tokyo; Bombay; Melbourne E. 4; Toronto 4.

Contents copyright 1953, by McGraw-Hill Publishing Co., Inc. (All rights reserved)

DEPARTMENTS

Editorial	4
Exploring the Textile Community	143
Kinks and Short-Cuts	164
Mill Maintenance	242
New Dyes and Chemicals	158
News About Men	280
News About Mills	270
News About Suppliers	262
News of the Month	256
Obituary	285
Pointers for Supervisors	141
Questions and Answers	174
Reader Service	177
Reviews of Books	238
Round Table	161
Textile Equipment News	145
Textile Calendar	254
Textile Tickles	161
Useful Accessories	246
Advertisers' Index	295

Table of Contents

MARCH • 1953
Vol. 103 No. 3

KEYED ACCORDING TO READER INTEREST

Feature Articles

SPINNER	WEAVER	KNITTER	FINISHER	ENGINEER		Page	COTTON	SYNTHETICS	WOOL
Y	W	K	F	E	Change Is Certain (Editorial)	4	C	S	W
Y	W	K	F	E	SAFETY	89	C	S	W
Y					CAN CONVERSION Cost $11.25 per Card	97	C	S	
Y	W	K	F	E	What's Good and Bad About SYNTHETICS	98	C	S	W
		K			Ratio in Jersey TRICOT FABRICS	101		S	
	W				QUALITY PROGRAM Improved Lane's Denims	102	C	S	
			F	E	Get Up-To-Date on SEQUESTERING AGENTS	104	C	S	W
				E	How To Solve Five ELECTRICAL Problems	106	C	S	W
	W				How To Stop Transfer FILLING BREAKS	108	C	S	W
		K			Knitting CRINKLED NYLON	110		S	
Y					Improved Winding of YARN-GRADING Boards	111	C	S	W
				E	HEAT SURVEY Stops Hidden Losses	112	C	S	W
Y					Ends-Down Studies in WORSTED Spinning	114		S	W
Y	W	K	F	E	Three MATERIALS-HANDLING Ideas	115	C	S	W
		K			CIRCULAR-KNITTING-Machine Performance	116	C	S	W
Y					How We Make Uniform PICKER LAPS	118	C	S	
			F	E	$12,150 a Yr. Saved by Purifying WATER	121	C	S	W
	W				HOMOGENIZED SIZE for Spun Synthetics	122		S	
		K			Removing Caked NYLON SIZE	123	C	S	
				E	Gas-Fired BOILER Pays Its Way	124	C	S	W
Y					Control VIBRATION On Twister Spindles	125		S	
Y	W	K	F	E	Learn the Approaches to GROUP LEADERSHIP	126	C	S	W
Y					COTTON Fiber Maturity and Fineness	128	C		
			F	E	Reduce Rejects of AUTOMOBILE FABRICS	131	C	S	W
Y	W	K			DESIGNING With New Fibers	135	C	S	W
Y	W	K	F	E	WORLD POSITION of Textiles in 1952	139	C	S	W

Textile Equipment News

		K			Machine Makes Jacquard EYELET FABRIC	144	C	S	
Y					GARNETT Processes Up to 575 Lb. an Hr.	144	C	S	
			F		Multipurpose Kjeldahl FLASK	146	C	S	W
Y				E	FLYERS Dynamically Balanced in 10 Sec.	146	C	S	
			F		DYE KETTLE Dyes Stock or Top	148		S	
				E	Study of 10-Micron SAMPLES Made Easier	148	C	S	W
			F		Coated Fabric Uniformity RECORDER	148	C	S	
			F		Tandem NAPPER Doubles Napping Production	150	C		W
			F		Cloth EVENNESS Assured Before Shearing	150	C	S	W
	W				THREAD CUTTER Is Versatile	150	C	S	W
	W				ROTO-CONER Snubbing Attachment	150		S	
			F	E	Automatic Dye-Jig DRIVE	152	C	S	W
		K	F		Feed Mechanism Improves STITCHING	152	C	S	W
			F	E	TACKER Operates at 65 Yd. per Min.	152	C	S	W
		K	F		Improved TRICOT and SUEDING Units	154	C	S	W
Y					TOW STAPLER Produces Uniform Sliver	154		S	
		K			Machine KNITS Overcoat Material, Linings	156		S	W
Y	W	K	F	E	Dry SLASHER Offers Ease of Operation	156	C	S	W
				E	Five-Unit Magnetic STARTER	224	C	S	W

Kinks and Short-Cuts

Y					How We Measure TAPES for Twisters	164	C	S	W
	W				Picker Sticks Brace Broken BEARINGS	164	C	S	W
		K			Kaumagraphs Removed From Nylon HOSIERY	164		S	
	W				WARP RACK Has Track for Rolling Beams	166	C	S	W
Y	W	K	F	E	Make a WRENCH To Remove Sunken Nuts	166	C	S	W
	W				Keep LOOM TICKETS Clean With Holder	168	C	S	W
Y	W	K	F	E	Use a Toothbrush To Clean OIL CUPS	168	C	S	W
Y	W	K	F	E	How One ELEVATOR Serves Two Buildings	168	C	S	W
	W				Lug Stops SWEEP-STICK Wear	170	C	S	W
Y	W	K	F	E	Guide BUSHING Increases Flat-Bit Life	170	C	S	W
	W				Use a GAUGE To Position Reed Cradles	172	C	S	W
Y	W	K	F	E	Two New Angles for Fabric ANALYZERS	172	C	S	W
			F	E	Try This Kind of WIRE for Wet Locations	172	C	S	W

THE Long-Range VIEW

Change Is Certain

One of the basic, and costly, shortcomings of mills and mill men is that they do not measure their accomplishments by one of the most proper yardsticks. Everybody compares himself with Jones and with accomplishments last year. It would be far more to the point and far more profitable to forget Jones and last year and use this yardstick: How do you compare with what is possible?

It is undoubtedly a human trait to be pleased if you have an edge on Jones. If your mill makes yarn or cloth a few cents a pound cheaper than your competitor, it probably is natural to feel comfortable about it and relax a little. If you happen to come up with a new wrinkle that gives your product a slight advantage over your competitors' products, that also is a matter for pride and complacency.

However, when you project your operation against the efficiency now possible, you promptly lose that feeling of comfort.

Two or three years ago, one of the leading textile-engineering firms made a study of a number of spinning mills, projecting the mills' operations against a model mill designed to take advantage of productivity possible at that time. These mills, all successful, were realizing only about 70% of what they could have been doing. Where they made a given amount of yarn for $1.30, they could have been making it for $1.00. Just last week another engineering firm discussed with us textile mills that have made 20 to 50% improvement in over-all productivity. And we have recently visited mills where weaving productivity was improved as much as 100%.

It is our firm conviction that no mill or mill department in the country is anywhere near approaching the productivity now possible. If you start building a mill right now, employing the most advanced engineering and construction know-how, equipping it with brand-new machinery of the latest models, and setting up your jobs by the best available textile-engineering methods, your mill will be obsolete to some degree by the time you pull the first machine on tight pulley.

We conservatively estimate that textile technology is advancing at the rate of 2% a year. Other highly reliable sources estimate 3½ and 4% a year. By all well-informed estimates, your mill or your department is becoming obsolete 1% at least every six months, and possibly 1% every three months.

Since textile technology—machines, layout, work methods, etc.—is continuously changing and improving, a mill that does not have progressive change going on forever is losing ground. In the last twenty years the textile industry has undergone almost a continuous surge of change. Yet it is amazing how stubbornly men, mills, and whole segments of the industry clamp their "open minds" tight against the thought of change.

The record of the textile industry shows that a mill can make enough money to keep going by jogging along some 50 to 60% behind what it could be doing. A mill can be one of the big money-makers by staying somewhere around 25% behind what it could be doing. So far as we know, the record does not show what a mill could do if it stayed right up with what could be done.

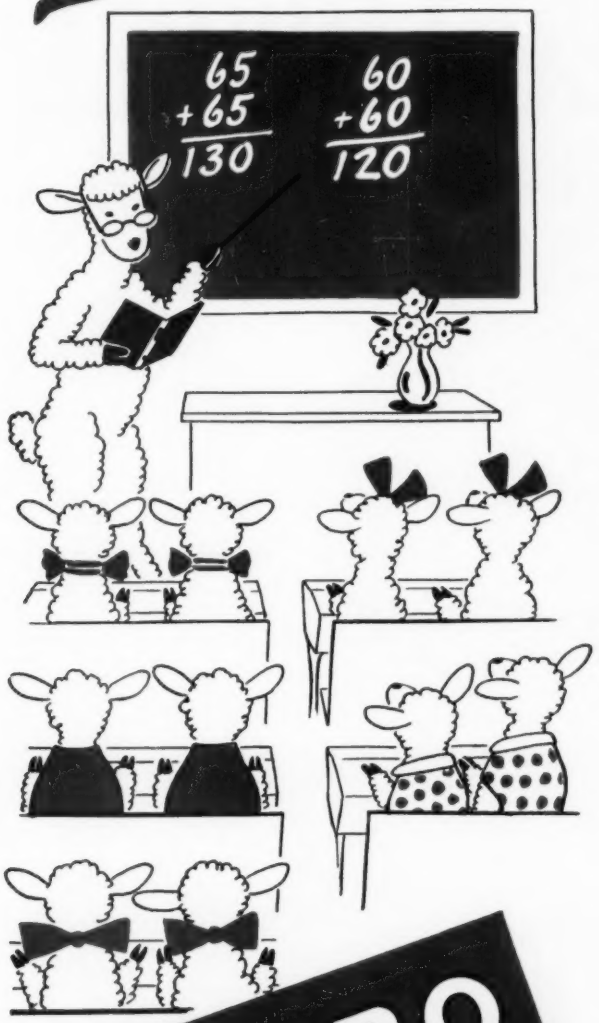
Actually, we do not believe any mill or mill department knows at any given time just how far behind it is. What is needed is a staff of men—similar to a mill-engineering, quality-control, cost-control, or personnel staff—whose function would be to continuously project an operation that is a model of efficiency and productivity. Such a staff should know at any given moment just how far short the mill is of its potential. It should know exactly how far behind the mill is dropping every month, and it should be able to estimate very closely how far behind it will be one, three, five, or ten years from now.

In the absence of such a staff, mill operating men should fill in. Even with such a staff, operating men from overseer up should know what the mill and the department could be doing. The spinning-mill study mentioned earlier showed astonishing variation in the backwardness of different mill departments. It is quite possible that buttoned-up "open minds" were largely responsible.

It is as certain as day and night that important advancements in textile technology will be made during the rest of 1953. The only question is whether you learn about them and take advantage of them now, or wait until Jones does it.

A. M. Thomas

Let's talk NUMBERS



Does 120 to 130 dozen pairs of perfectly finished, static-free stockings per 8-hour day interest you? That's the usual production of a Turbo AD-48. Here are some more interesting facts.

The Turbo AD-48 will do two jobs — preboard with steam — finish board with heated air — or combine both. It is A.S.M.E. tested for 30 pounds steam pressure — has automatic controls to take the guesswork out of hosiery finishing. All the operator does is to dress and strip the forms — and, only one operator is needed.

There are 48 smooth, polished, solid leg forms, shaped to your needs. In groups of 24 each, they glide in and out of the finishing chamber with quiet precision. You can run two sizes at one time. There's no banging or jolting to injure delicate fabric. Forms remain upright. Action is "gentle as a lamb".

Write now for complete information about the advantages the precision-engineered Turbo AD-48 offers you toward more "firsts", better profits. Inquire too about the other Turbo machines for high quality preboarding and boarding.

TURBO MACHINE COMPANY
Lansdale, Pennsylvania, U.S.A.
Southern Rep.: F. W. Warrington Co., Charlotte, N. C.

See us at the Knitting Arts Show.

 For more information, write direct or use Reader Service post card.

HERE ARE 5 GOOD REASONS WHY YOU SHOULD SELECT

SACO-LOWELL

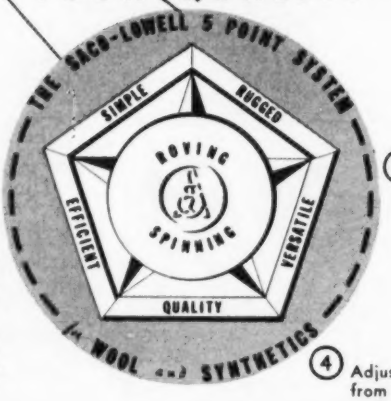
ROVING & SPINNING

FOR PRODUCTION OF YOUR QUALITY YARNS

(1) The drafting elements are not modifications of any cotton system, but have been designed specially for wool and synthetics. The fiber control required to assure smooth and even drafting is equally effective on long and short wools, synthetics and blends of these fibers with wool.

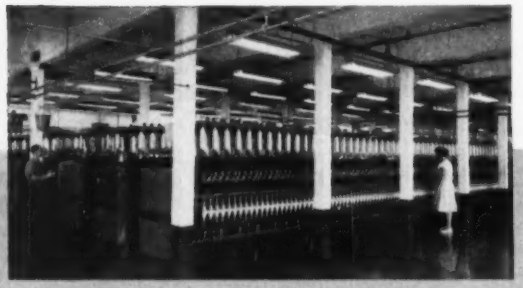
(2) This system is new in concept, original in design, rugged in construction.

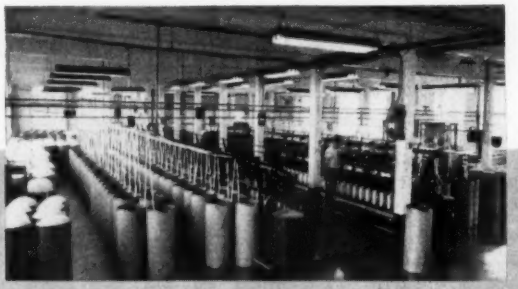
(3) With roll spreads ranging from 3.375" to 9.00" it is possible to process all commercial grades of wool and synthetics without time consuming and expensive equipment changes. Modern sub assemblies, including New Era Spindles, Lubricated Rings, "Umbrella Creels," and S-L-T Self Aligning Antifriction Top Rolls all contribute to trouble-free, economical operation.



(4) Adjustments required when changing from one stock to another are readily made in a short time.

(5) Large roll diameters, with effective weighting systems, assure freedom from defects which develop from fiber slippage, undrafted grists and "lap-ups" and chokes.





SACO-LOWELL Installation at Lebanon Knitting Mills, Inc., Pawtucket, R. I.

There's an illustrated folder with complete information about Saco-Lowell Roving and Spinning available without obligation. Write for your copy today.

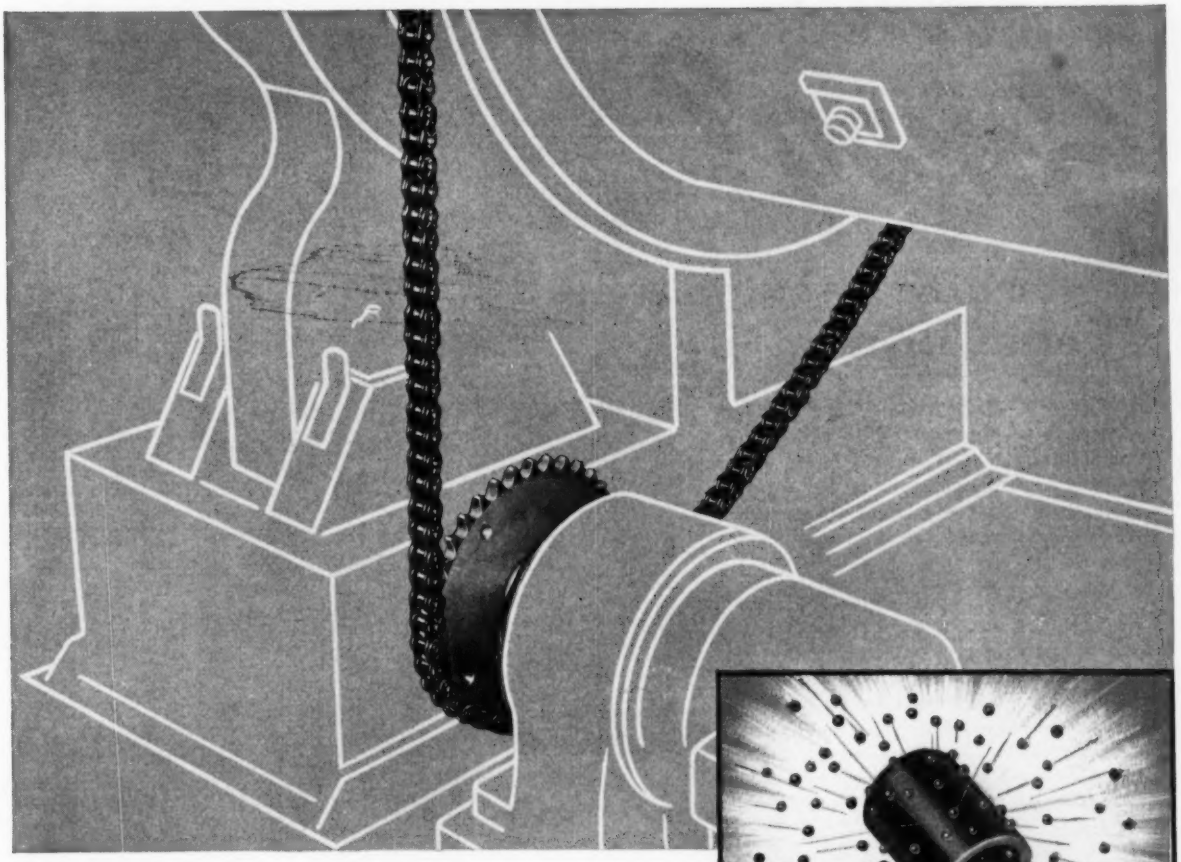
SACO-LOWELL

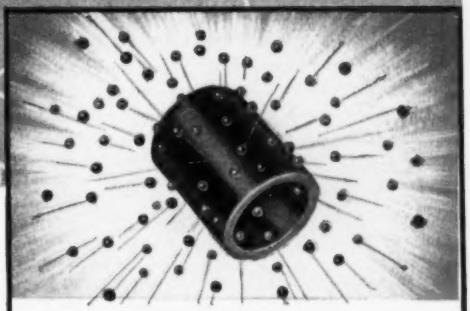
60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENVILLE • ATLANTA

Yes, SHOT-PEENED rollers add fatigue life to your roller chain





Look for the distinguishing darkened rollers. Thousands of tiny steel balls hammer the metal—"cold work" each roller . . . pay off in extra fatigue life . . . added ability to withstand shock and impact.

. . . just one of the extra-life features you get with every LINK-BELT Roller Chain

WHETHER it's for drive or conveyor service, every Link-Belt Roller Chain gives you a performance bonus. In addition to shot-peened rollers, lock-type bushings multiply capacity to withstand shock loading. And closer heat-treat control, rigid testing and thorough inspection pay off in greater uniformity . . . extra years of life. Link-Belt Precision Steel Roller Chain is built in single or multiple widths, ⅜" through 3" pitch. Double pitch 1" through 3". A call to your nearby Link-Belt office will bring you prompt, expert service. Send for Engineering Data Book No. 2457.

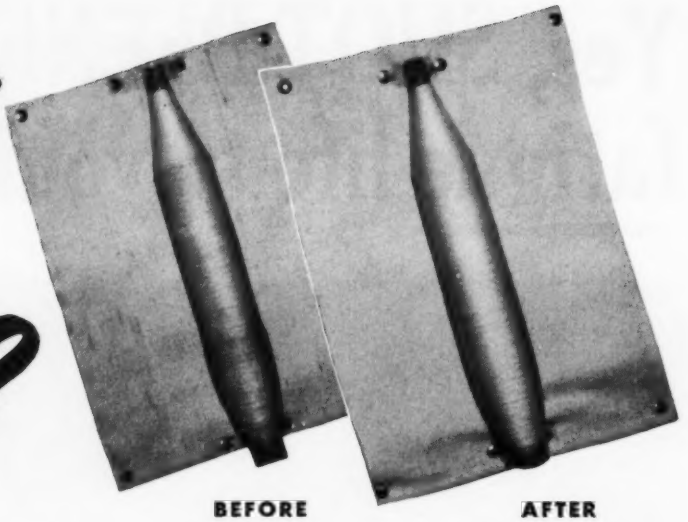
13.119

LINK-BELT

ROLLER CHAIN & SPROCKETS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

Smug about Smog?



BEFORE

Samples of yarn and cloth prior to installing an AMCO electrostatic air cleaning system. Repeated washings were unsuccessful in removing smudge from cloth.

AFTER

Following the installation of an Amco central station with electrostatic filters, these results were obtained. Freedom from carbon and dirt in air spelled the big difference!

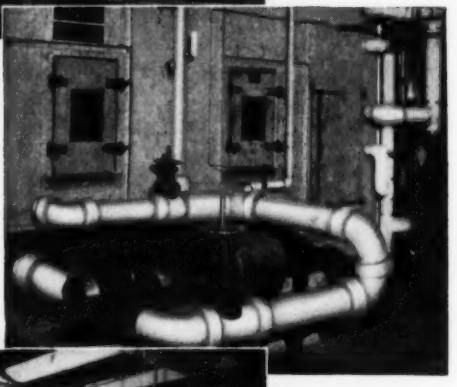
YOU CAN'T AFFORD TO BE...
HERE'S PROOF...

"Don't put up with dirty air, if you want to put up superior yarns" . . . recommends York Knitting Mills, Toronto, Canada, where filtering and washing air *pays off* . . . in better quality yarns! And the "Before and After" pictures reproduced above give graphic support to that advice.

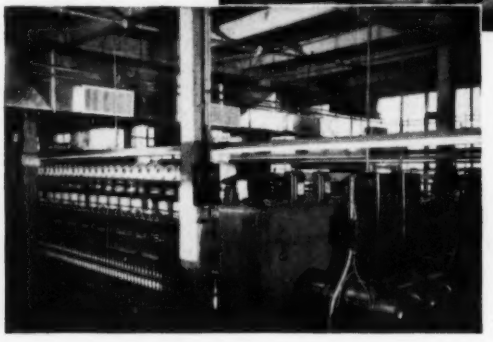
An Amco central station air conditioning system delivers *only* air that's custom tailored . . . to the proper degree of temperature; to the exact relative humidity desired; and most important . . . air just as fresh and clean as a breeze off the ocean! No wonder results are uniformly outstanding . . . regain maintained; yarn counts kept more even; static electricity eliminated; closer machine adjustments and higher speeds maintained; less broken fibers, dust and fly; cleaner yarns and cloth; stronger, smoother and more uniform fabrics; greater worker comfort and efficiency — to mention a few.

Amco has *both* duct and ductless systems — and can install humidification, evaporative cooling or central station air conditioning, alone or in combination. You can rely on Amco for impartial advice on the installation best suited to your needs. Call an Amco engineer.

Plenum chamber showing recirculating air dampers with damper motors at left; lint screens in foreground; electrostatic filter in background.



Centrifugal pump and piping which operates air washer in background.



Spinning room — showing air supply duct with atomizers over each air outlet mounted on air and water pipes.

AMCO

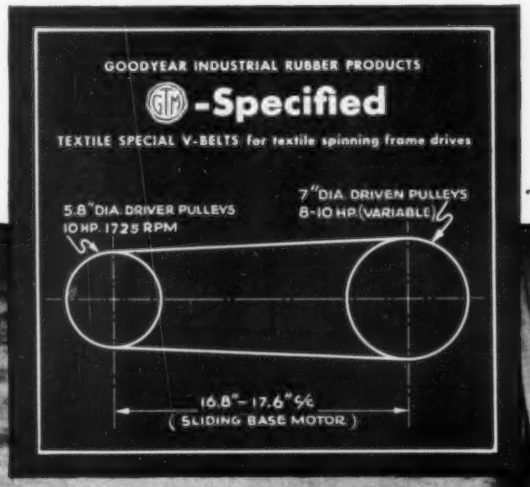
AIR CONDITIONING SYSTEMS

Humidification • Evaporative Cooling • Central Station

AMERICAN MOISTENING COMPANY
AFFILIATED WITH GRINNELL COMPANY, INC.
PROVIDENCE, R. I.
ATLANTA • BOSTON • CAMDEN • CHARLOTTE

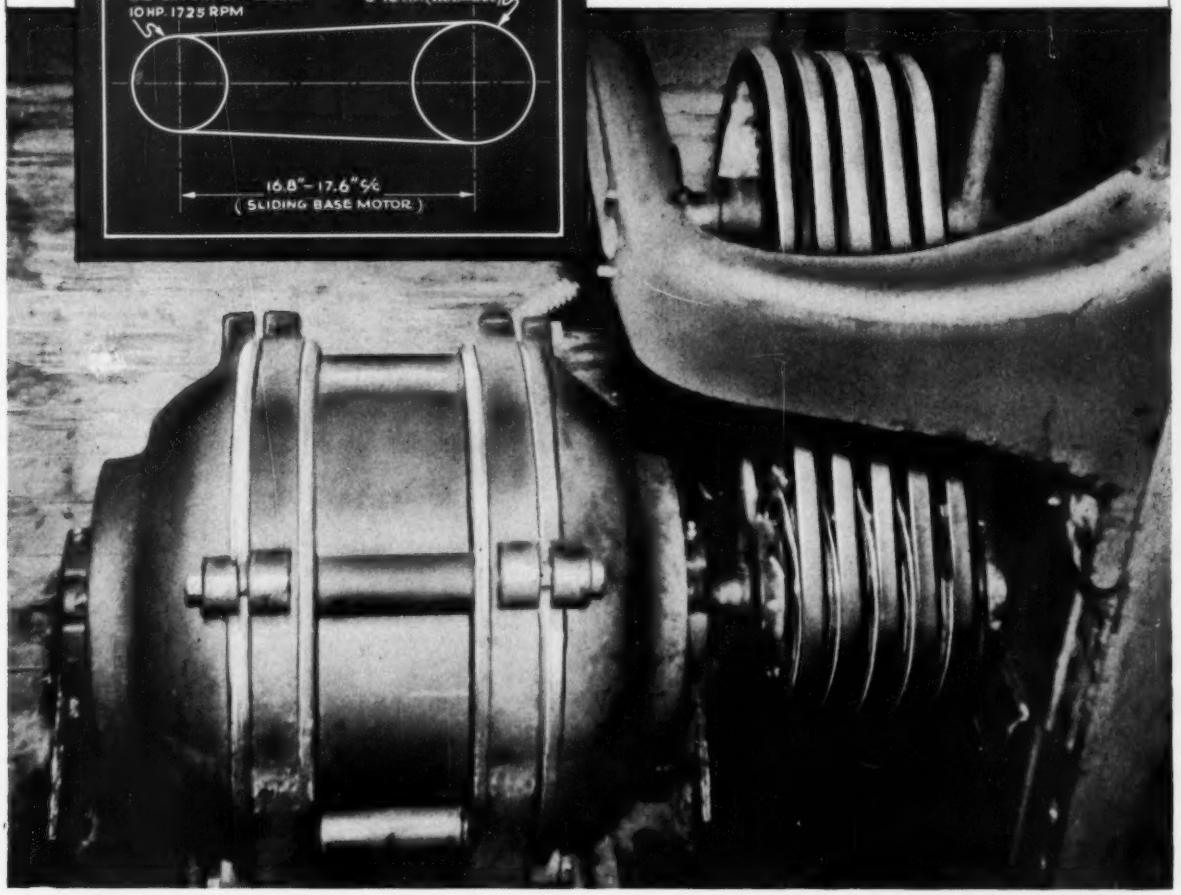
SERVED 3 TIMES LONGER

on spinning frame drives


GOODYEAR INDUSTRIAL RUBBER PRODUCTS
GTM -Specified
TEXTILE SPECIAL V-BELTS for textile spinning frame drives
5.8" DIA. DRIVER PULLEYS
10 HP. 1725 RPM
7" DIA. DRIVEN PULLEYS
8-10 HP. (VARIABLE)
16.8"-17.6" c/c
(SLIDING BASE MOTOR)

Ordinary V-Belts driving Textile Spinning Frames averaged one year's service before failure.

The G.T.M.—Goodyear Technical Man—specified Textile Special V-Belts. Thanks to design-for-the-job, they have served so far over three years—*triple service to date*. Goodyear, Mechanical Goods Division, Akron 16, Ohio.



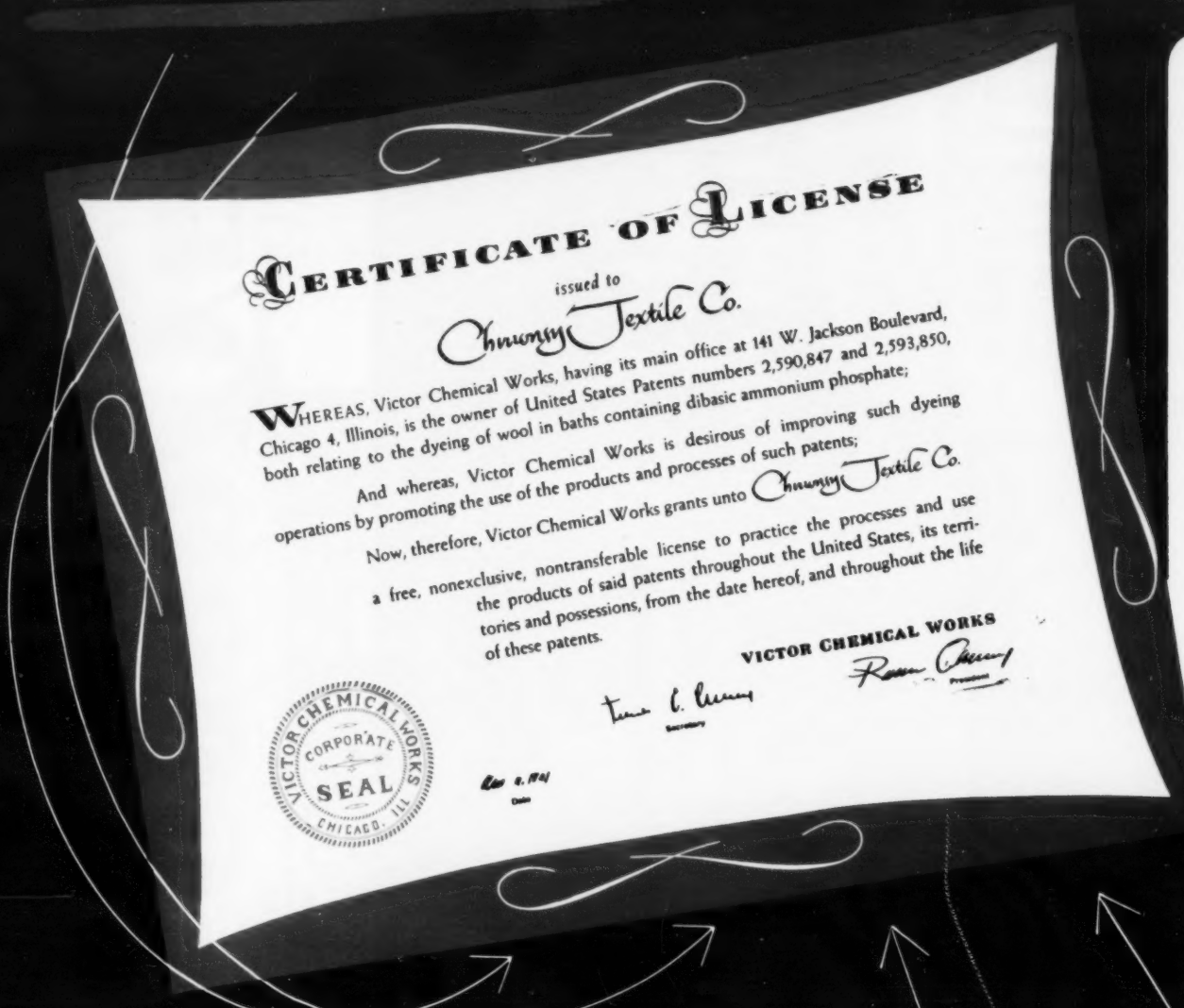
YOUR GOODYEAR DISTRIBUTOR can quickly supply you with Hose, Flat Belts, V-Belts, Packing, Tank Lining, Rubber-Covered Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."

GOODYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD" —every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

OPPORTUNITY for mills dyeing wool!



CERTIFICATE OF LICENSE

issued to

Chumming Textile Co.

WHEREAS, Victor Chemical Works, having its main office at 141 W. Jackson Boulevard, Chicago 4, Illinois, is the owner of United States Patents numbers 2,590,847 and 2,593,850, both relating to the dyeing of wool in baths containing dibasic ammonium phosphate;

And whereas, Victor Chemical Works is desirous of improving such dyeing operations by promoting the use of the products and processes of such patents;

Now, therefore, Victor Chemical Works grants unto Chumming Textile Co.

a free, nonexclusive, nontransferable license to practice the processes and use the products of said patents throughout the United States, its territories and possessions, from the date hereof, and throughout the life of these patents.

VICTOR CHEMICAL WORKS

Treas. C. Chem

Pres. Chem

VICTOR CHEMICAL WORKS CORPORATE SEAL CHICAGO, ILL.

Dec 4, 1951

Date

Victor Diammonium Phosphate Process Offers 9 Advantages

1. Greatly improved conditioning of the cloth before dyeing begins.
2. A proper starting alkalinity to provide for dye penetration.
3. A gradual and automatic increase in acidity that improves fixation and dye exhaust.
4. Uniformity of process.
5. Increased levelness of dyeing.
6. Efficient use of dyestuff.
7. Saves time and money because of fewer rejects.
8. Ready availability of diammonium phosphate of highest quality, and at low cost.
9. Process requires no major changes . . . standard equipment can be used.

Royalty-free licenses will be issued to companies desiring to use the process and Victor's textile specialists will assist you in the installation. Please write on your company letterhead.

VICTOR CHEMICAL WORKS
141 West Jackson Boulevard
Chicago 4, Illinois

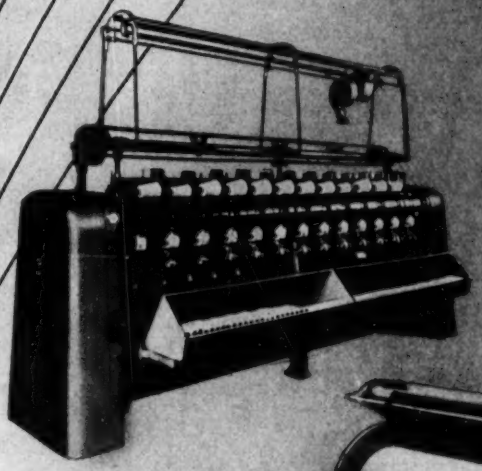
VICTOR

Dependable Name in

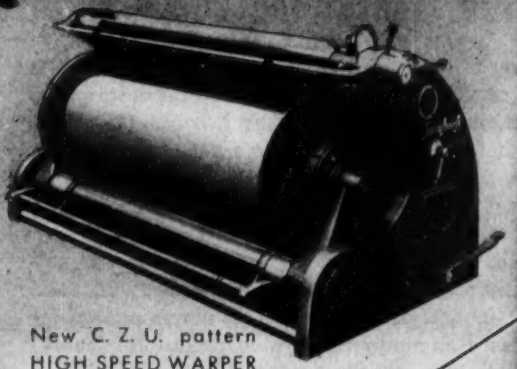
for 55 Years

MODERN MACHINERY FOR WINDING AND WARPING

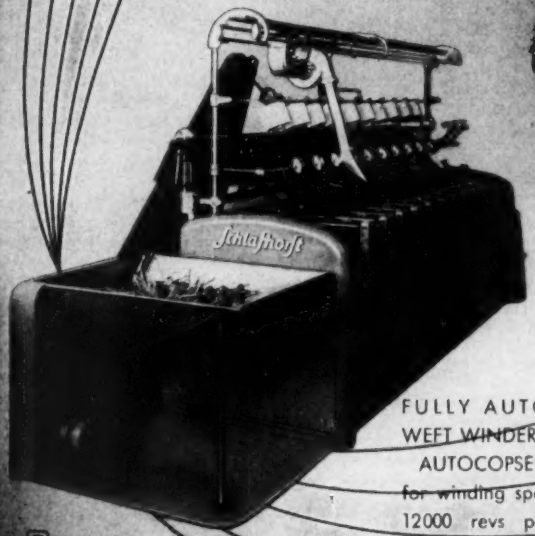
Schlafhorst



NEW GROOVED CYLINDER
CONE AND CHEESE WINDER
B. K. N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity



We also make CONE CREELS
of various types, such as f. i.
MAGAZINE CREELS
and TRUCK CREELS
with electric detectors of our
eyeboard system

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A. S. E.
for winding speeds up to
12000 revs per minute

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

Electronic spacer patterns guide stockpile through sequence of cuts automatically. Responsive Oilgear Transmission provides speedy travel with pin-point stopping within 3/1000ths of an inch from zero tolerance. Lawson Cutter also used in repetitive single cuts and for trim on sides. Photo in plant of Liedtke Brothers, Chicago.

The RESULT?

Accuracy just 900% better

Production increase 50 to 500%

Over and over and over again, Oilgear Fluid Power proves to be the right solution to a drive problem. Take the case of the Lawson Cutter.

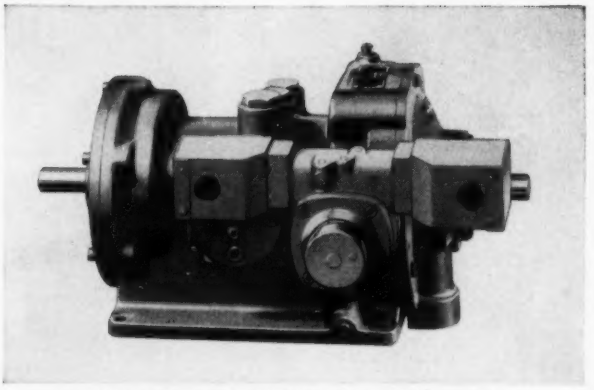
If precision is emphasized anywhere, that "where" is the field of fine color printing of every description. Money, time, effort are spent that art be right, that plates be right, that printing be right—to a hairline. And then comes the cutting operation where all that has gone before is saved—or wasted. Small wonder that cutting remained a hand operation for many years.

But the E. P. Lawson Company, manufacturer of cutting machines, wanted to modernize and mechanize the operation. Its designers turned to an electronic spacer device. This if anything would give precision in marking *where* to cut. But the next problem was to find a power drive capable of *obeying* the orders the electronic signal system was capable of *giving*. Lawson tried one type of drive. It varied all over the map. Lawson tried another type of drive. It was fairly accurate —but did not hold up.

Finally, as so many machine designers have done, Lawson turned to Oilgear. And there, as so many machine designers have done, Lawson found the answer to its problem.

The answer? Undeviating accuracy within 3/1000ths of an inch from zero tolerance—just 900% better than what had been achieved in the past; speed, translating into production increases of 50% to 500% month in and month out. How? Through the absolute responsiveness of Oilgear Fluid Power Drive to the automatic control system. Immediate, shockless acceleration to full speed "forward". Precise measured slowdown as the feed fence nears the target. Precision stopping "on target" for the cut and then rapid acceleration toward the next cut.

Here again is an example of the superlative "rightness" of Oilgear Fluid Power "generators," motors, transmissions—for almost any type of installation or machine requirement, big, little, and all those in between.



Oilgear Two way Variable Speed Transmission as used on Lawson Electronic Spacer Cutters. These drives also provide unlimited speed range from zero to maximum. Speed changes made in split second or specified time.

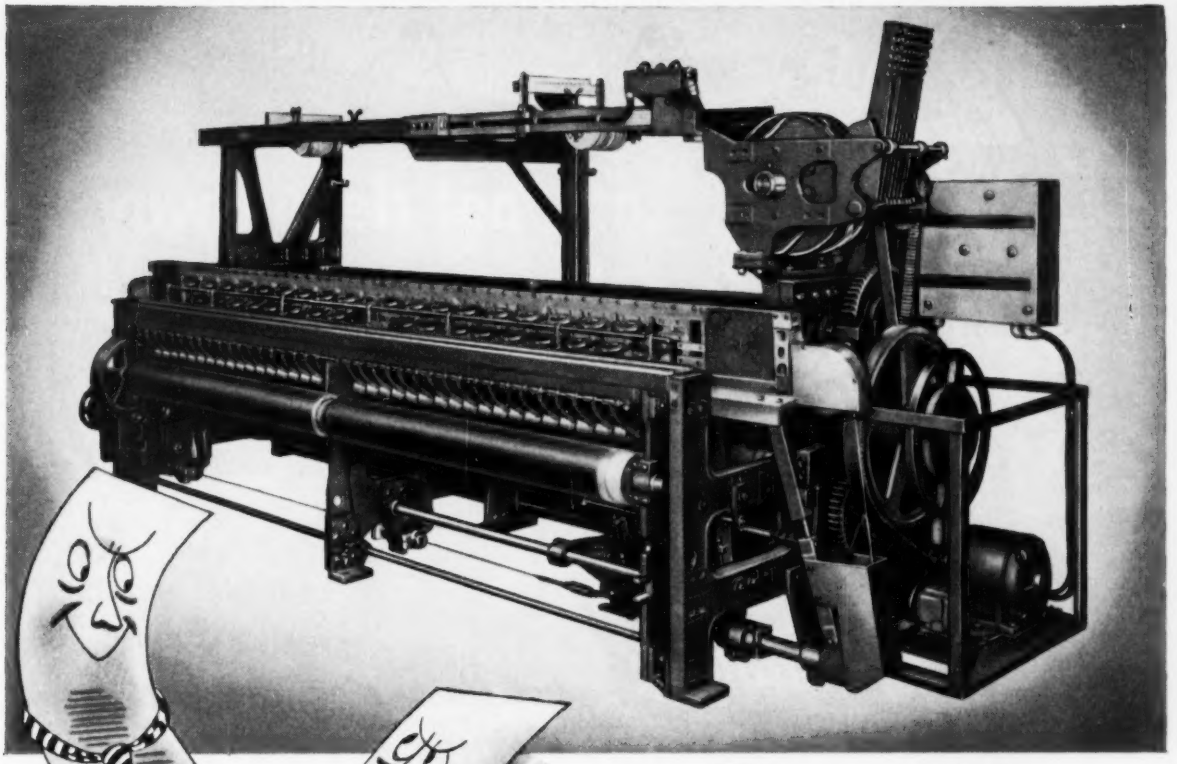
Chances are Oilgear is *the* solution you've been looking for. And Oilgear engineers will be just as quick to tell you if Oilgear is *not* for you. Ask for further information from an Oilgear Engineering Representative. No charge. No obligation. THE OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wisconsin.

OILGEAR

OILGEAR

PIONEERS...NOW THREE PLANTS FOR FLUID POWER

POWER, MOTORS, TRANSMISSIONS, CYLINDERS & VALVES



C & K

is not

"Narrow-Minded"

about NARROW-FABRIC Looms

...we make them both—long AND short!

Yes, in this modern C&K design, the distance between loomsides can be varied to accommodate any number of shuttles and spacings, as required by individual mills.

And that's only the beginning of the list of newsworthy features of this important new loom:

• High speed with low maintenance • Rigidity of all-metal frame • One-piece magnesium laybeam • No clutch . . . loom crankshaft direct-connected to motor by timing belt • Wide range of weaving speeds by changing pulley on motor • Electric braking by plugging switch • Cam, head or dobby harness motion • And many other new C&K features.

Remember: This new C&K Narrow-Fabric Loom can be built with any number of shuttles and spaces... either single-deck circular, double-deck circular, single-deck straight, double-deck straight, straight-shuttle 2-bank cross-shot, or single-deck 2-bank straight drop shuttle. *Never before in the history of narrow-fabric weaving has there been a loom of such versatility as this one.* So whatever your requirements for narrow fabrics...tapes, webbing, elastic, ribbon, or what have *you? . . . this is your loom! Get in touch with C&K today.*

This invisible trademark stands back of the trademarks of the World's Finest Woven Fabrics

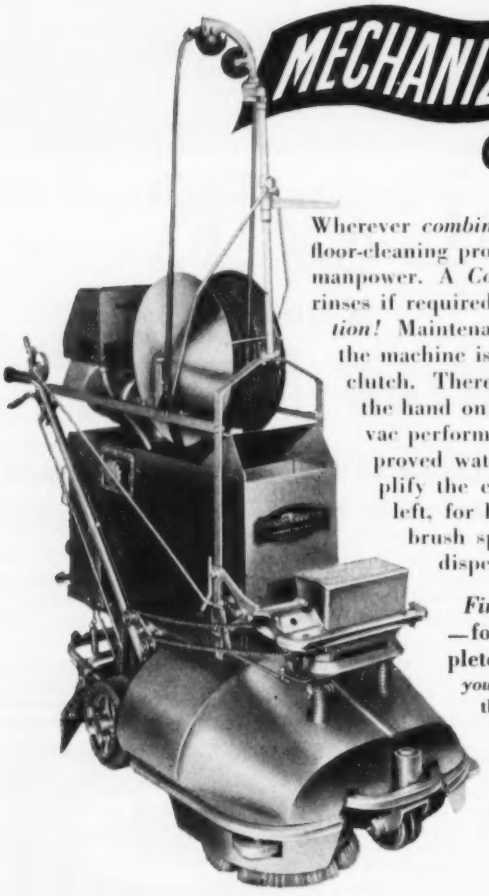
Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. • CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I. • CROMPTON & KNOWLES OF CANADA, LTD., MONTREAL, QUE.

Let's not clean away dollars and man-hours with costly, inadequate floor care

MECHANIZE *your floor-cleaning with a* COMBINATION SCRUBBER-VAC!



Wherever *combination-machine-scrubbing* is the practical solution to the floor-cleaning problem, any lesser, slower method is wasteful of money and manpower. A *Combination Scrubber-Vac* applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor) — *all in one operation!* Maintenance men like the *four-in-one feature* . . . also the fact that the machine is simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow* — slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs efficiently and quietly. Cable reel is self-winding. Improved waterproof wiring and minimum electrical connections simplify the cleaning of the machine. *Model 213P Scrubber-Vac* at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread, and cleans up to 8,750 sq. ft. per hour! (Powder dispenser is optional.)

***Finnell* makes *Scrubber-Vac Machines* in a full range of sizes — for small, vast, and intermediate operations. From this complete line, you can choose the size that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac*, and that *there's a Finnell man nearby* to help train your maintenance operators in the proper use of the machine . . . to recommend cleaning schedules for most effectual care . . . and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1903 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.**

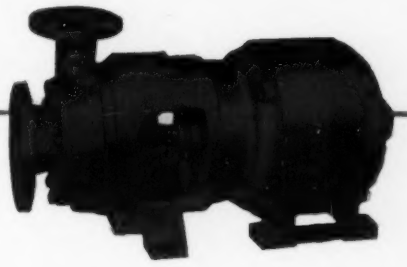
FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

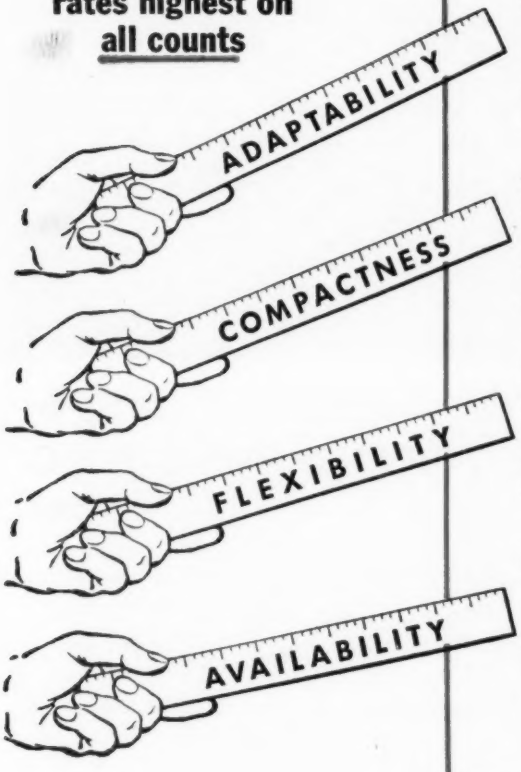
50th Anniversary — Everything for Floor Care — FINNELL

BRANCHES IN ALL PRINCIPAL CITIES

Four ways to measure REAL PUMPING ECONOMY



You'll find that the I-R MOTORPUMP rates highest on all counts



The Motorpump line is so complete that you can get a pump that's designed to handle your particular capacity and head requirements at *maximum efficiency*. Sizes range from ¼ to 50 hp, for capacities from 5 to 1800 gpm and heads to 650 ft.

The space-saving design and light weight of the unit-type Motorpump cut installation costs. Motorpumps can be mounted in "close quarters" where no other type of pump would fit. No special foundations are required.

Motorpumps operate equally well in *any position*—can be mounted horizontally, vertically, or any angle; on floor, wall, columns or ceiling. This flexibility of mounting often permits simpler and more economical piping arrangements.

Despite current shortages of many industrial products, you can still get prompt delivery on Ingersoll-Rand Motorpumps. Most of the popular sizes are carried in stock and can be delivered immediately from branch or factory. This avoids costly delays—both in pump replacement and new installations.

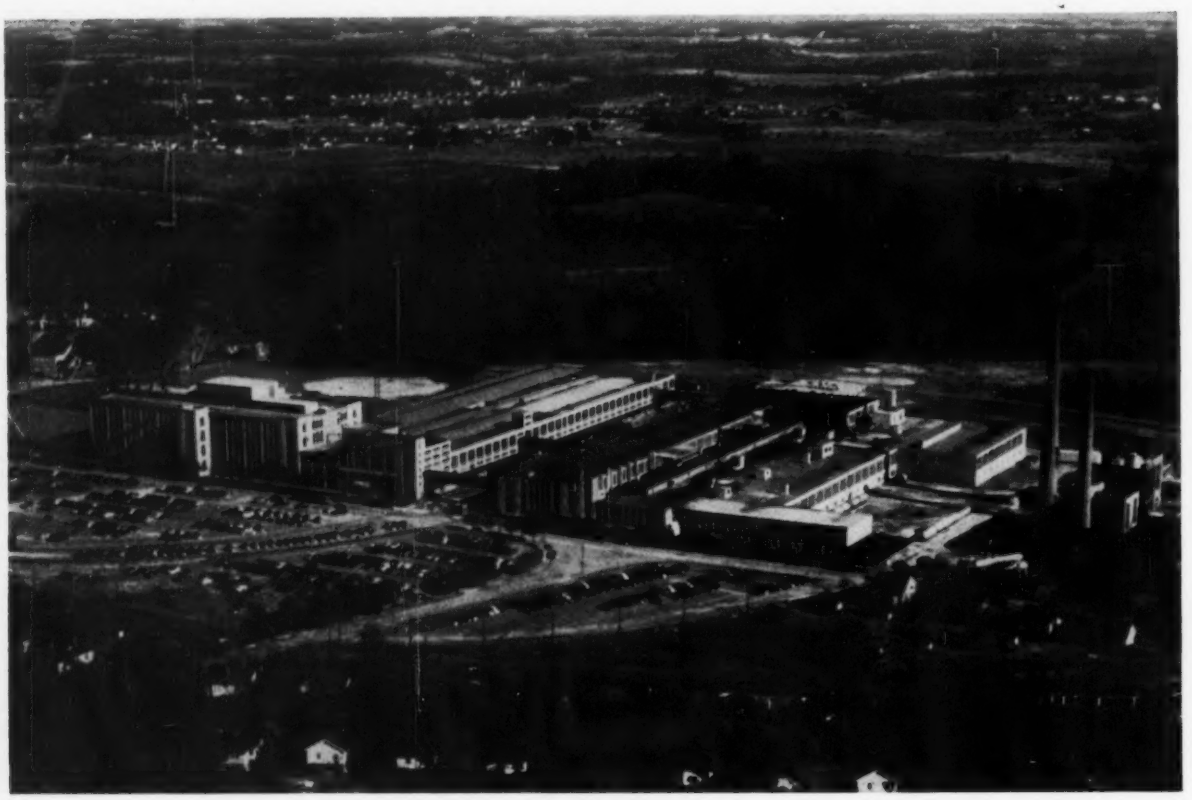
MOTORPUMP **Ingersoll-Rand**

11 BROADWAY, NEW YORK 4, N. Y. 758-9

ROCK DRILLS • COMPRESSORS • AIR TOOLS • CENTRIFUGAL PUMPS • TURBO BLOWERS • CONDENSERS • DIESEL AND GAS ENGINES

 For more information, write direct or use Reader Service post card.

A Lockwood Greene Project



PACIFIC MILLS, LYMAN, S. C.

A RECORD OF SERVICE IN TEXTILE FINISHING

Pacific Mills at Lyman, S. C., shown here, is one of the largest cotton finishing plants in U. S. The project includes a sheeting mill of 691 looms and 31,380 spindles; also storehouses, bleachery, cotton printing, cotton & rayon dyeing and finishing plant of 5,000,000 yds. capacity per week, a power plant and mill village. Lockwood Greene Engineers handled the removal of the Owners' spinning machinery from its Lawrence, Mass., plant and the installation in the new mill.

as measured by:

New Plants	71
Major Additions	100
Minor Additions, Reports, Appraisals	347
Total Engagements	518
Cost New Plants & Major Additions	$55,000,000

LOCKWOOD GREENE

ENGINEERS - ARCHITECTS

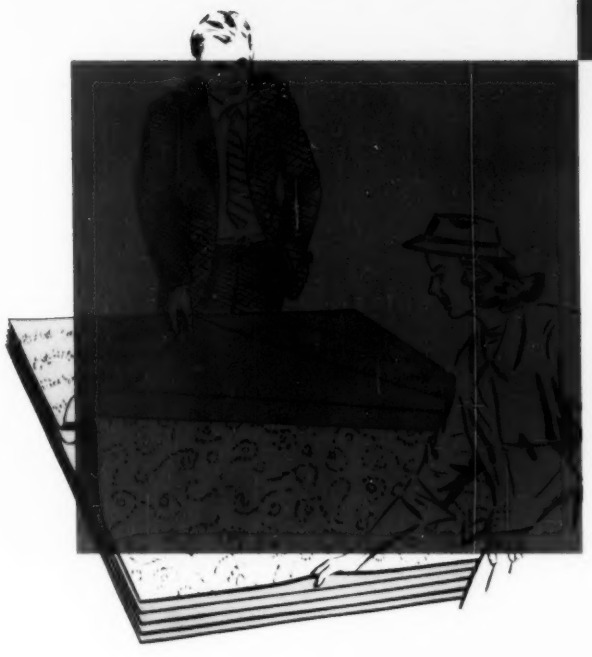
Boston 9, Mass. 40 Central Street
New York 20, N. Y. 10 Rockefeller Plaza
Spartanburg, S. C. Montgomery Bldg.
215 St. James Street, West, Room 601, Montreal, Canada

NATIONAL ALIZARINE

clear-
bright-
light fast

SAPPHIRE AR

Use this bright, reddish-blue anthraquinone dye as a self color or in combination with other acid dyes for such applications as piece goods and carpet yarn. It is extremely level dyeing and has excellent fastness to bleeding, spotting, waving and rubbing; good fastness to light. Used in fiber blends, it dyes nylon effects appreciably stronger than wool; stains cotton, viscose and acetate effects but very slightly.



SEND FOR TECHNICAL BULLETIN NO. 362

Ask our nearest office for your copy of this new bulletin which shows dyeings and gives complete properties of this widely useful National Dye.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N.Y. • BOwling Green 9-2240

Boston 14, Mass., 150 Causeway St.	CApitol 7-0490	Richmond 19, Va., 8 North Fifth St.	Richmond 2-1930
Providence 3, R.I., 15 Westminster St.	DExter 1-3008	Columbus, Ga., Columbus Interstate Bldg.	Columbus 3-1029
Philadelphia 6, Pa., 200-204 S. Front St.	LOmbard 3-6387	Greensboro, N.C., Jefferson Standard Bldg.	GReensboro 2-2518
San Francisco 5, Cal., 517 Howard St.	SUtter 1-7507	Chattanooga 2, Tenn., James Building	CHattanooga 6-6347
Portland 9, Ore., 730 West Burnside St.	Beacon 1853	Atlanta 2, Ga., 254 E. Paces Ferry Rd.	EXchange 3594
Chicago 54, Ill., The Merchandise Mart	SUperior 7-3387	New Orleans 12, La., 714 Carondelet Bldg.	Raymond 7228
Charlotte 1, N.C., 201-203 West First St.	CHarlotte 3-9721	Toronto 2, Canada, 137-143 Wellington St. W.	Empire 4-6495

L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

BUSINESS ESTABLISHED 1840

PFIZER CHEMICALS for the TEXTILE INDUSTRY

How Can They Help You?

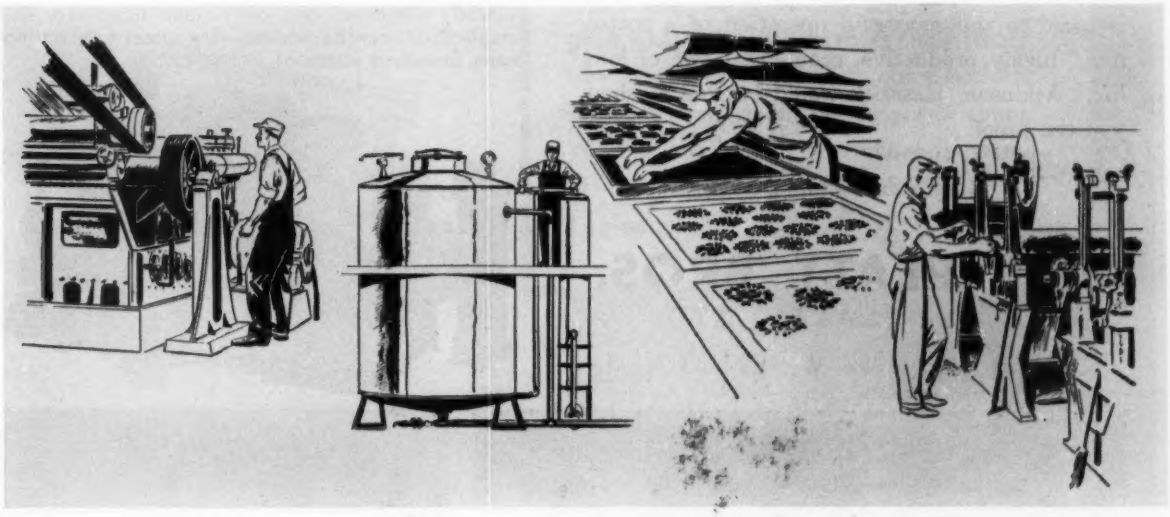
PFIZER GLUCONIC ACID, Sodium Gluconate, Ammonium Gluconate and Glucono Delta Lactone are extremely mild, non-toxic and non-corrosive. The sequestering ability of the gluconate radical plus their mildness make them highly valuable to the textile industry. They make possible clearer, sharper colors in dyeing by inactivating trace metals and are used as iron sequesterants in kier boiling and mercerization. Ammonium Gluconate and Glucono Delta Lactone prove ideal as acid forming catalysts for printing pastes.

PFIZER OXALIC ACID ranks high in the textile industry as a remover of rust spots and as a bleaching agent. This acid and its derivatives are also utilized to advantage in the preparation of alum and chrome mordants for dyeing.

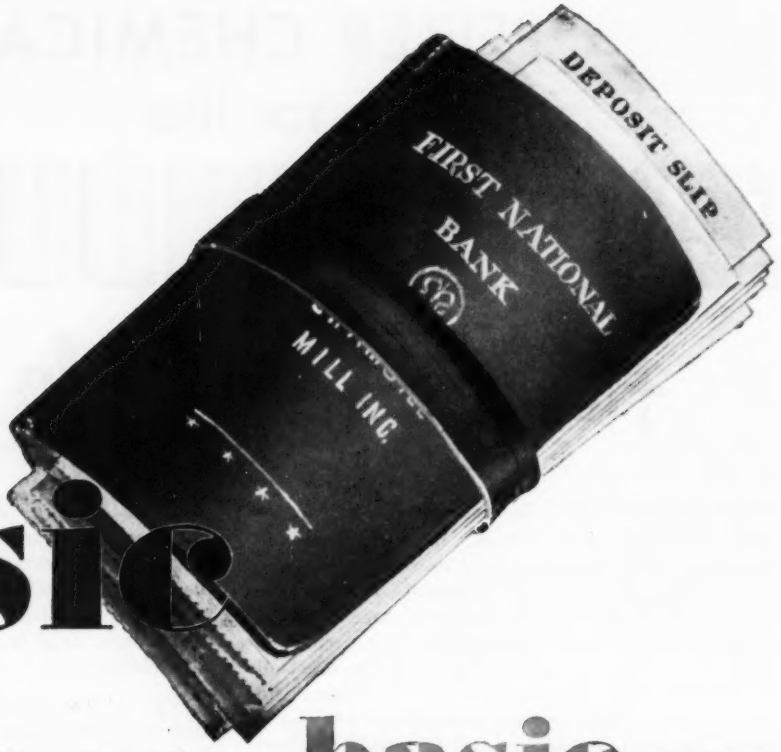
PFIZER CITRIC ACID AND SODIUM CITRATE are becoming increasingly important in many textile processes because they form water-soluble complexes with metallic ions, such as iron and calcium, in neutral or slightly alkaline solutions. Being a mild organic acid, Citric Acid is also of interest as an acidifier in dyeing.

Write Department T for Bulletins #6, "Ammonium Gluconate and Gluconic Acid in Textile Printing," #27, "Glucono Delta Lactone in Acid Colloid Resins," #33, "Gluconic Acid and Derivatives," #34, "Oxalic Acid."

CHAS. PFIZER & CO., INC.
630 Flushing Ave., Brooklyn 6, N. Y.
Branch Offices:
Chicago, Ill., San Francisco, Calif., Vernon, Calif., Atlanta, Ga.



Manufacturing Chemists for Over 100 Years **Pfizer**



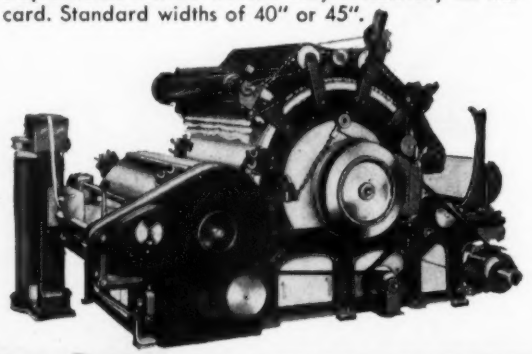
basic

You're in business to make money and *the efficiency of your machinery has a lot to do with profits.* Platt machines are developed in co-operation with the world famous T.M.M. Ltd. spinning research laboratory, built to rigid specifications and **proven in mills throughout the world.** This is the type of machinery that is basic to the successful operation of a cotton mill: highly productive, economical and of long life. Atkinson, Haserick would be glad to show you the proof.

basic TO CARDING

EVEN, NEPLESS WEBS . . . . . .

With Platt's Revolving Flat Card, accurate settings are easy to obtain and hold, insuring the production of an even, nepless web for both light and heavy carding. There is an exceptionally strong cross rail construction and rigid foundation. Vibration is virtually eliminated and air currents minimized. Cut staple fibers can be worked very successfully on this card. Standard widths of 40" or 45".



PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND

Staff of 150 work on fiber control problems for all sections of the spinning industry.

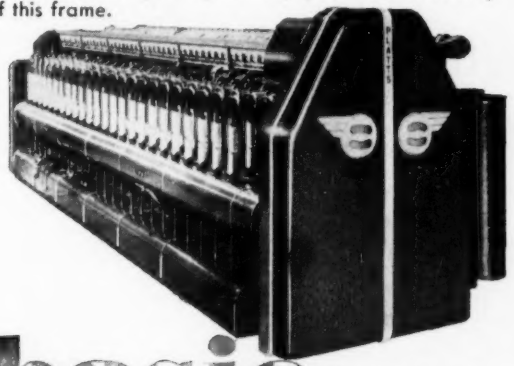
Laboratory provides continual information on all processes from bale to plied yarn.

For more information, write direct or use Reader Service post card.

basic TO ROVING

FIBER AND TWIST CONTROL...

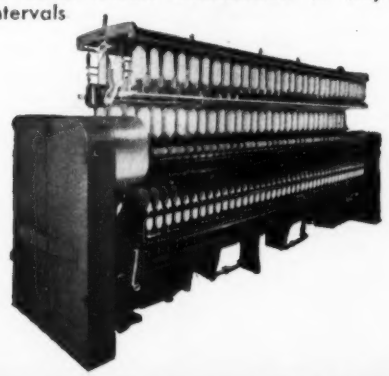
The new Platt M.S.2 High Draft Roving Frame operates with great efficiency at high speeds. Three drafting zones give unprecedented fiber control through a wide range. A stronger roving is formed by inserting more of the total twist close to the nip of the front roll. The firm roving sheds little fly. You will be impressed by the quiet operation, speed and efficiency of this frame.

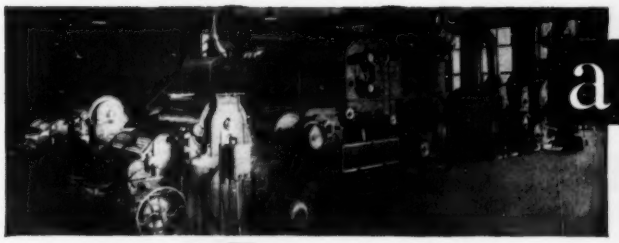


basic TO SPINNING

LARGE PACKAGES, HIGH SPEED...

The Platt M1 Ring Spinning Frame is a practical, proven frame for large packages. It has a choice of high drafting arrangements and a new spring arm roller weighting that adjusts to a wide range of staple lengths without altering the nip pressure. The simplified headstock has central lubrication, few gears and flexibility of turns per inch. Roller bearing spindle needs routine maintenance at only 2,500 hour intervals





Actual conditions in opening, picking, carding and spinning rooms are reproduced in the laboratory.

a management responsibility

Don't you owe it to your mill to investigate ALL the new processes, new fibers, new machinery. A visit to our Charlotte display rooms would be time well spent. We are engineers and agents for some of the finest machinery developed in England.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

211 CONGRESS STREET
BOSTON 6, MASS.
1639 W. MOREHEAD STREET
CHARLOTTE 2, N. C.

The world's best known NOBLE COMB, Prince-Smith & Stells,

for wool, hair, blends or 100% synthetics & recombing

PROVEN

STURDY

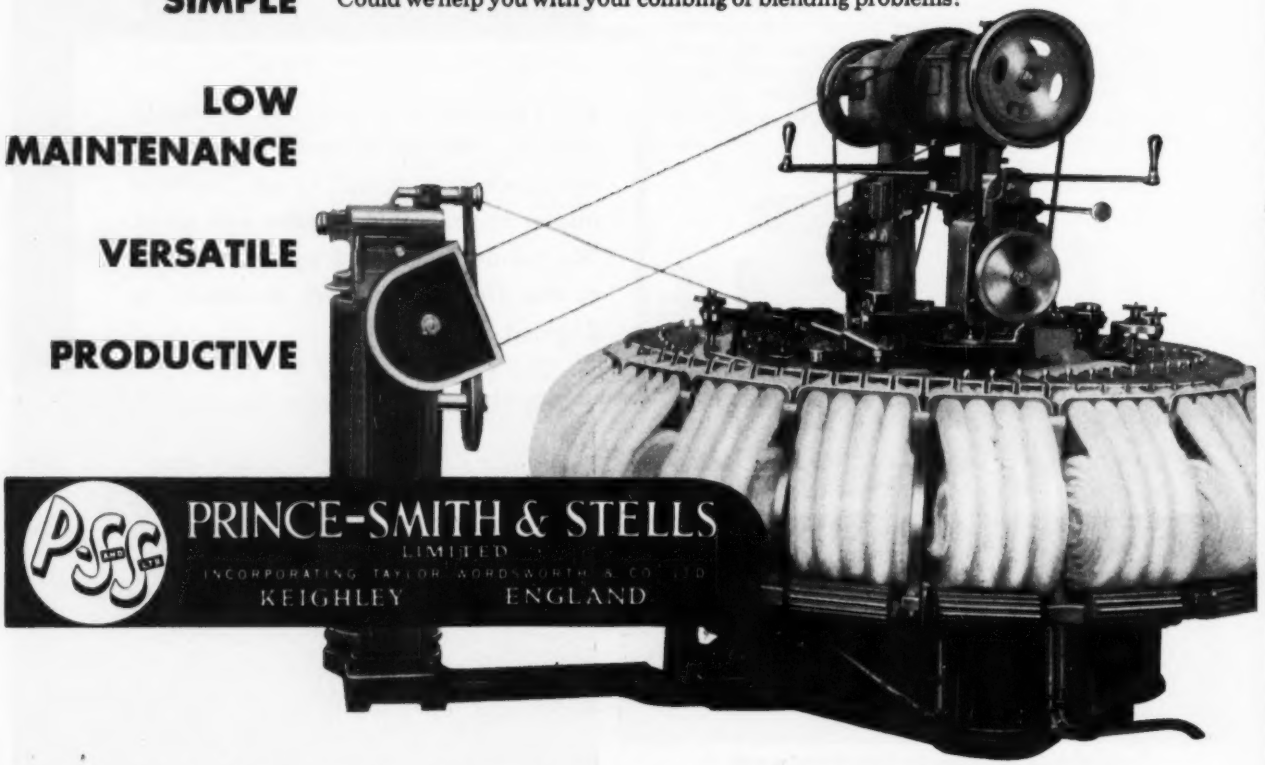
SIMPLE

LOW MAINTENANCE

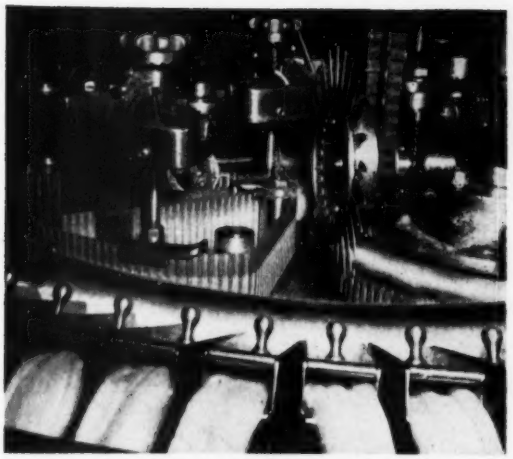
VERSATILE

PRODUCTIVE

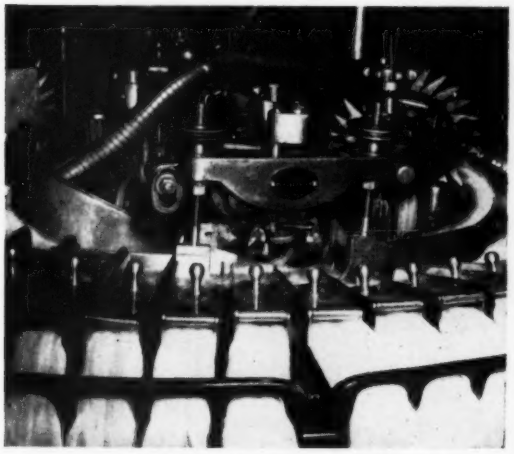
The Prince-Smith & Stells Noble Comb has been the standard of the wool combing industry for many years. It deals most satisfactorily with long prepared wools, mohair, alpaca, camel hair, carpet wools, coarse, medium and fine crossbreds, merinos and all types of synthetic fibers where the average fiber length is 3" or longer. It is the most accessible of the combs to work on from above or below. Circles with different pinning, for different stocks, are interchangeable without disturbing the gearing. Given reasonable care, it will keep at peak efficiency for decades. Could we help you with your combing or blending problems?



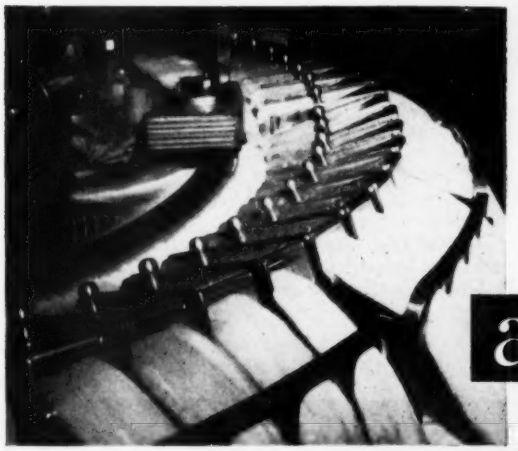
U.S.A. Agents for French System Machinery: Blake Electric Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.



The new P.S.B. Roller Stand assures absolutely equal pressure at each end of the roller and allows easy replacement of the apron. Adjustments are made with the machine running.



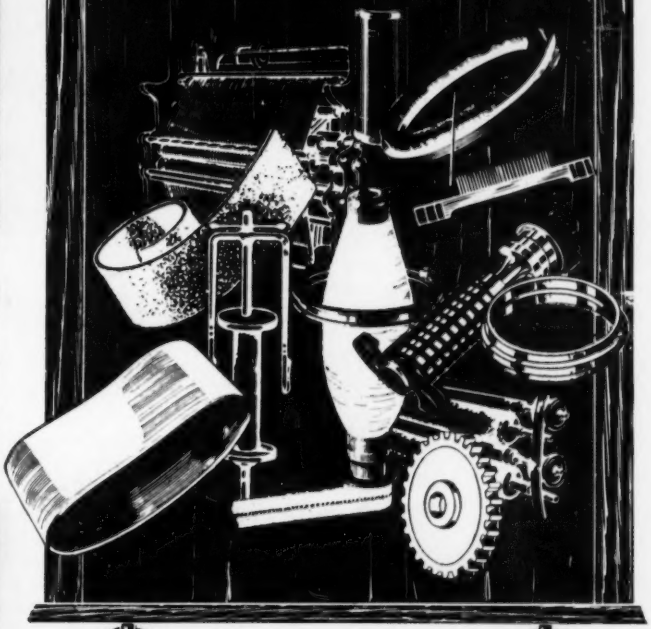
The "Perfect" feed knife maintains uniform feeding conditions automatically and eliminates the human element. We can send you a catalog with detail views and fuller data.



Perfectly balanced dabbing motion reduces vibration and wear. The new type circle cleaner raises residual fibers to the top of the pins.

1823

An established mill supply service protects your investment in all Atkinson, Haserick machinery



Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

211 CONGRESS STREET
BOSTON 6, MASS.
1639 W. MOREHEAD STREET
CHARLOTTE 2, N. C.

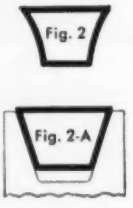
WHY
Gates V-Belts Wear Longer-

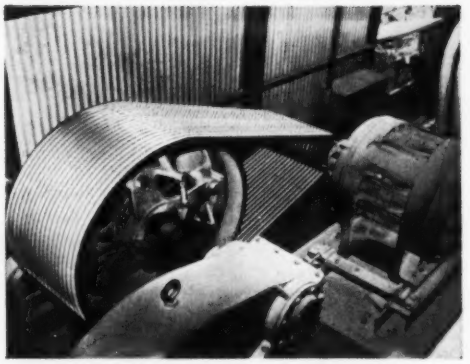
The CONCAVE SIDE (U.S. Patent No. 1813698) is what gives the Extra Wear!

Take any *straight-sided* V-Belt (Fig. 1) and bend it as it bends in going around its pulley. You will clearly see its sides *bulge out* (Fig. 1-A). These sides therefore press *unevenly* against the V-pulley and this causes extra wear at the point shown by arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2).

You will see the precisely engineered CONCAVE SIDES fill out to an exact fit in the sheave-groove (Fig. 2-A). The sides press *evenly* against the V-pulley. All wear is distributed *uniformly* across the *full width* of the Gates Vulco Rope—and this means longer belt *life* and *lower* belt *costs* for you.





Typical Gates Vulco Rope Drive—the Gates V-Belts are built with Concave Sides to insure longer belt wear.

When you buy V-Belts, be sure to get the V-Belt with the CONCAVE SIDES—the Gates Vulco Rope!

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and in 71 foreign countries.

CS-533

V-Belts—Hose
Molded Rubber Goods
for industry
World's Largest Maker
of V-Belts

Gates® VULCO ROPE DRIVES

THE GATES RUBBER COMPANY • DENVER, U.S.A.

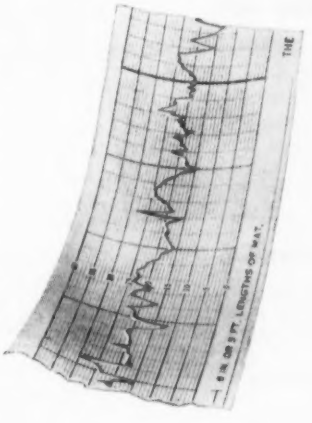
"We improve quality evaluation with Brush Textile Uniformity Analyzers"

The Cotton Department of the Deering Milliken Service Corporation reports: "Chart records made by the Brush Uniformity Analyzer are of great value in our research, development, and mill service . . . uniformity tests are highly important in the evaluation of new equipment, processing conditions, and modifications to machinery".

Likewise, in actual mill operations at Deering Milliken, Brush Analyzers improve quality control. The instruments provide a definite numerical value for quality of yarn, roving and sliver, and also aid in trouble-shooting.

The Brush Uniformity Analyzer, originally designed by the Institute of Textile Technology, is highly sensitive; irregularities as short as ½ inch in a length of yarn are detected. The chart record is immediately available, and can be kept for future reference. Yarn samples can be charted as fast as 1000 feet in 3 minutes. The instrument can be operated by anyone after a brief instruction period.

The Uniformity Analyzer® is sold and serviced through regular Brush representatives located throughout the U.S. For information write Brush Electronics Company, Dept. GG-3, 3405 Perkins Avenue, Cleveland 14, Ohio. Canadian Representatives: A. C. Wickman Limited, Toronto.



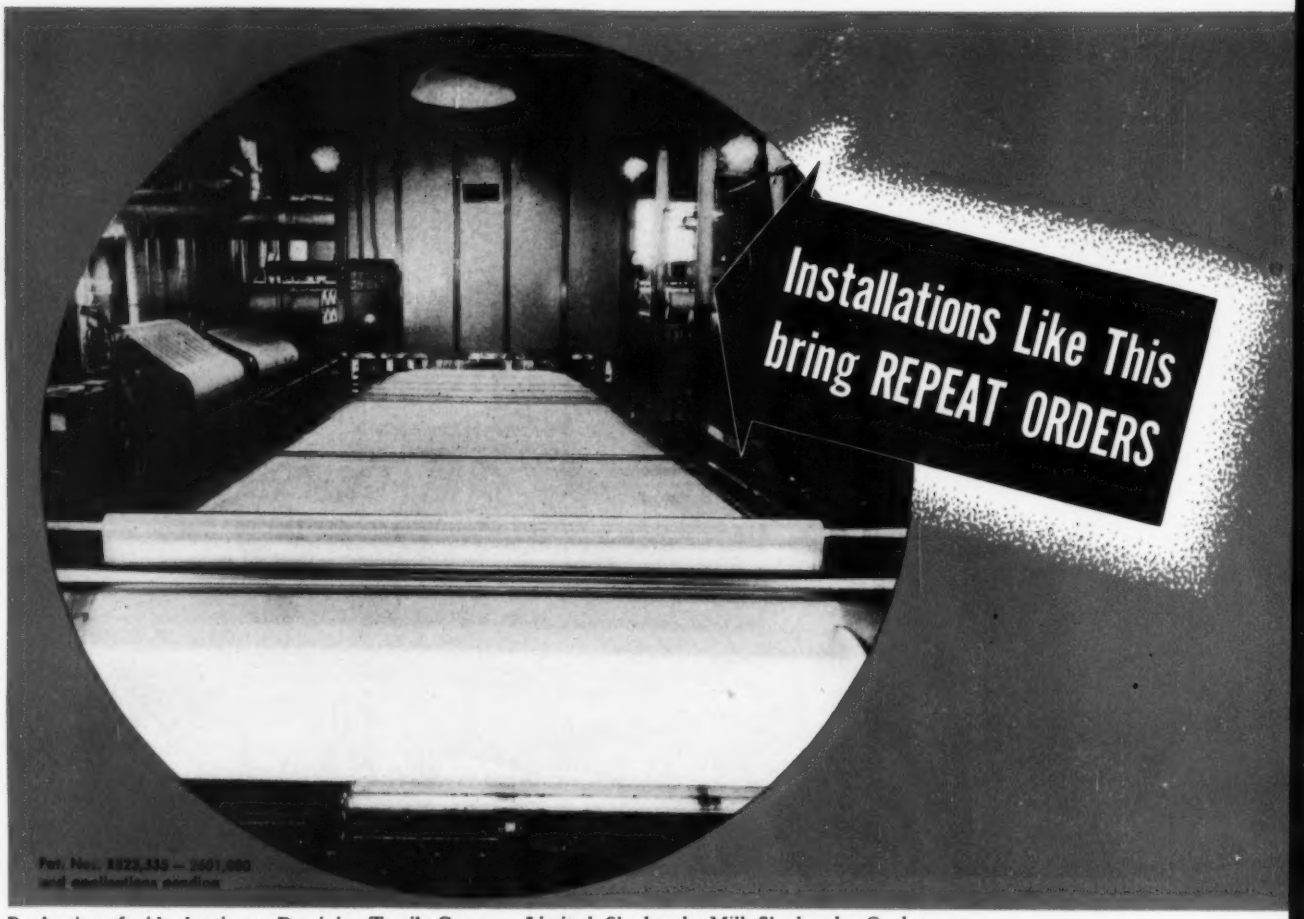
This sample chart of roving indicates gross deviation from nominal weight per unit length.

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZOELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

BRUSH ELECTRONICS

formerly
The Brush Development Co.
Brush Electronics Company
is an operating unit of
Clevite Corporation.



Production of wide sheeting at Dominion Textile Company Limited, Sherbrooke Mill, Sherbrooke, Quebec

Uxbridge *Gentle-Air* Dryers*

SEND FOR:

Bulletin A:

Maximum Production Model, up to 1780 lbs. per hour

Bulletin B:

Normal Production Model, up to 750 lbs. per hour

For six years, high output mills have used Uxbridge Gentle-Air units to dry all staple yarns — cotton, woolen, worsted, man-made or blend. The result is a high ratio of repeat orders: **Additional** Uxbridge Gentle-Air Dryers ordered by mills requiring more than one slasher —

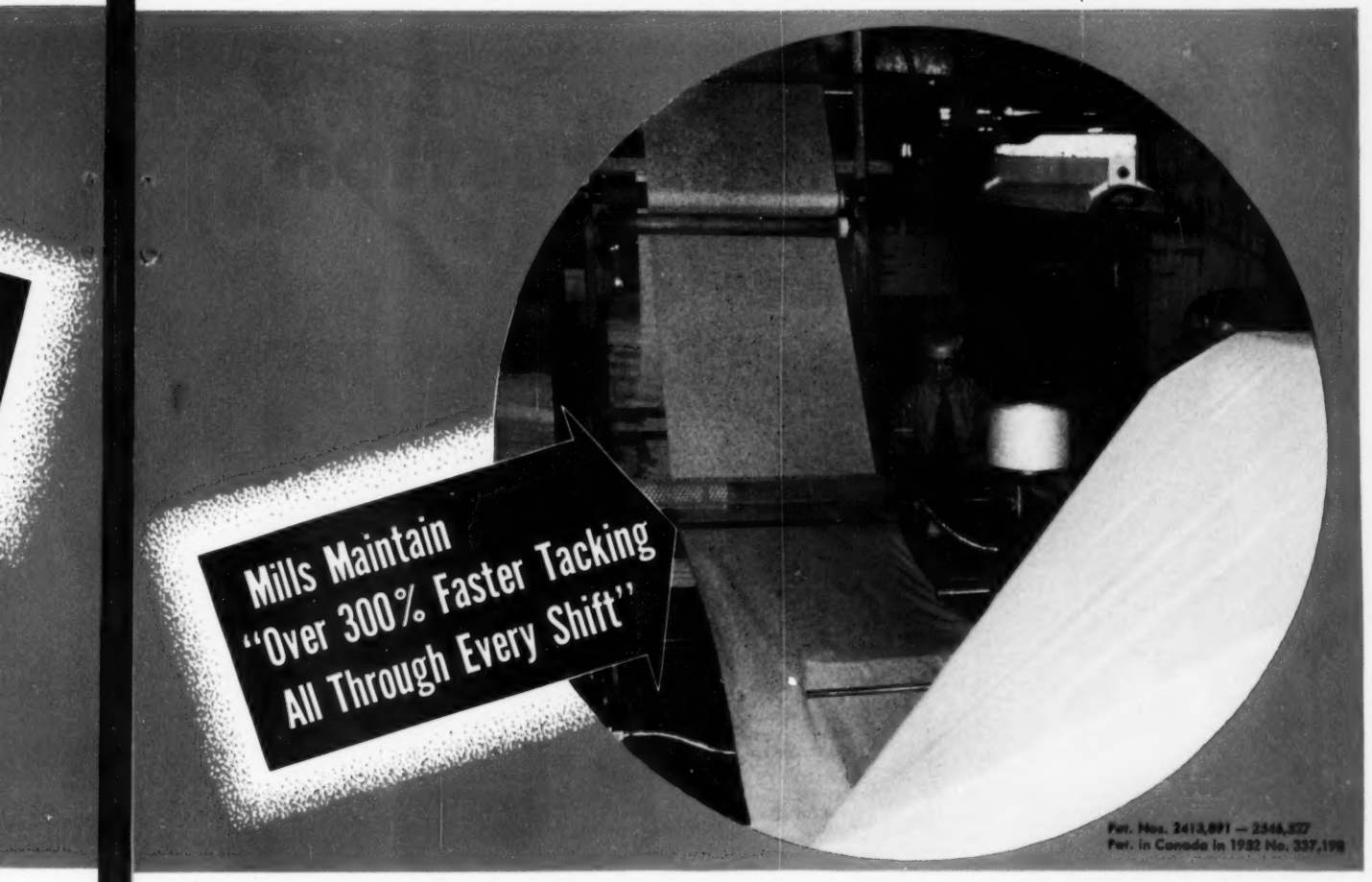
9 companies ordered 1 additional dryer
5 companies ordered 2 additional dryers
2 companies ordered 3 additional dryers
1 company ordered 4 additional dryers
1 company ordered 6 additional dryers

And, to our knowledge, *not one mill* that has tested Uxbridge Gentle-Air has thereafter installed a slasher dryer of any other make!

The reason for preferring Uxbridge Gentle-Air is simple. Like our other products listed below, it was designed from the mill man's point of view. Developed and perfected by our Research Department to fill our own requirements, with all operational problems worked out long ago, Uxbridge Gentle-Air is the first of the modern-type air dryers — and the only one that has been proved by the mills themselves in years of practical performance.

Uxbridge Gentle-Air helps your looms weave better profits — brings slasher room performance up into line with the productive capacity of your modern looms and spinning frames. Easy to install, it operates between the front and back ends of any conventional slasher — new or old. Write for descriptive bulletins, without obligation.

*** "Mill-Proved" Products — developed and manufactured by Uxbridge from the mill man's point of view.**
Uxbridge Chalker for filling winders • Uxbridge Easy-Rid Textile Chalk • Uxbridge Control Spray for pin drafters



Uxbridge *Automatic* Tacker*

Uxbridge Automatic Tacker takes over mechanically one of the meanest jobs in any textile plant. We designed it to tack any style or weight of fabric up to 94 inches wide (with modifications to handle wider fabrics), at an average speed of 45 yards per minute. But high output mills report *speeds up to 65 yards per minute* — bringing the tacking process completely into line with production rates of their other modern equipment. Compare these speeds with the average of 17 yards per minute for conventional hand tacking!

This rugged machine relieves the operator of all hand aligning duties — that seriously retard efficiency and output during a working shift. Cloth of varying weights and widths can be sewed together. Selvages are perfectly aligned by mechanical means, tacking in selvage is assured at all times by electrically actuated mechanisms. Imperfect tacking due to operator fatigue is eliminated.

SEND FOR BULLETIN: Write for details on this profitable precision-built new automatic tacker.

AT YOUR SERVICE: On request, our Engineering Department — the staff that originates "Mill-Proved" Uxbridge equipment — will study your tacking, slasher room, or related problems. No obligation, when you have us advise on ways to increase and improve production. Just tell us when you want an Engineer to call.

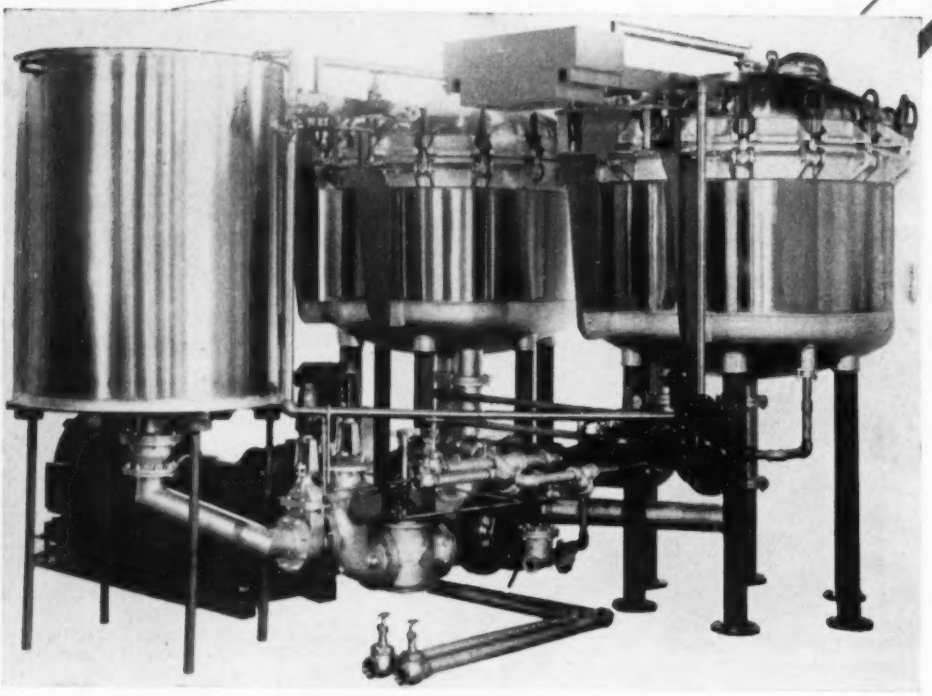
BACHMANN UXBRIDGE WORSTED CORPORATION
UXBRIDGE, MASSACHUSETTS

Representatives:
South—Ira L. Griffin and Son, P. O. Box 1576, Charlotte 1, N. C.
New England & Canada—James H. White, 40 Crystal Ave., Derry, N. H.
South America—Quimanil S/A, Anilinos Representacoes Matriz, Sao Paulo, Brazil

More warps & Better warps

Uxbridge "Gentle-Air" Dryer • Uxbridge Automatic Tacker

Gaston County's **rugged construction**



...*Assures* Safe Working Pressure of 75 PSI

. . . With a safety factor of 5!

Gaston County's rugged construction is of prime importance in the high-pressure, high-temperature dyeing of synthetic fibers.

Gaston County Dyeing Machines meet the full requirements of the ASME code.

GASTON COUNTY DYEING MACHINE CO.

Pioneers in Automatically Controlled Dyeing Machinery

Stanley, N. C.

Albert R. Breen
80 East Jackson Blvd.
Chicago, Ill.

Gaston Co. Dyeing Machine Co.
Terminal Building, 68 Hudson St.
Hoboken, N. J., G. Lindner, Mgr.

The Rudel Machinery Co., Ltd.
614 St. James St., W. Montreal
137 Wellington St., W. Toronto

Only One Wool Oil Supplier Offers You All This!

1. SCIENTIFIC ANALYSIS...
A S/V engineer uses special instruments (like this moisture meter) to analyze mill operations.

2. ENGINEERING REPORT...
After analysis, S/V engineer prepares report, with recommendation of correct wool oil.

3. PROVED PRODUCTS...
Recommended from complete line, meeting all degrees of scourability and discoloration resistance.

4. LABORATORY SERVICE...
Technicians in S/V laboratories make tests of mill samples to control performance on the job.

5. PROGRESS REPORTS...
Show efficiency of fiber lubrication, make recommendations for still further improvement.

Why accept less for your mill?

There's no mystery about which wool oil is best for your operation when you call in Socony-Vacuum. Our fiber lubrication service and complete line of *S/V Woolrex Oils* assure your use of the right product—*on a price-performance basis!* Why not get all five benefits of this exclusive wool oil service?

SOCONY-VACUUM OIL COMPANY, INC.
Chemical Products Division, 26 Broadway, New York 4, N. Y.

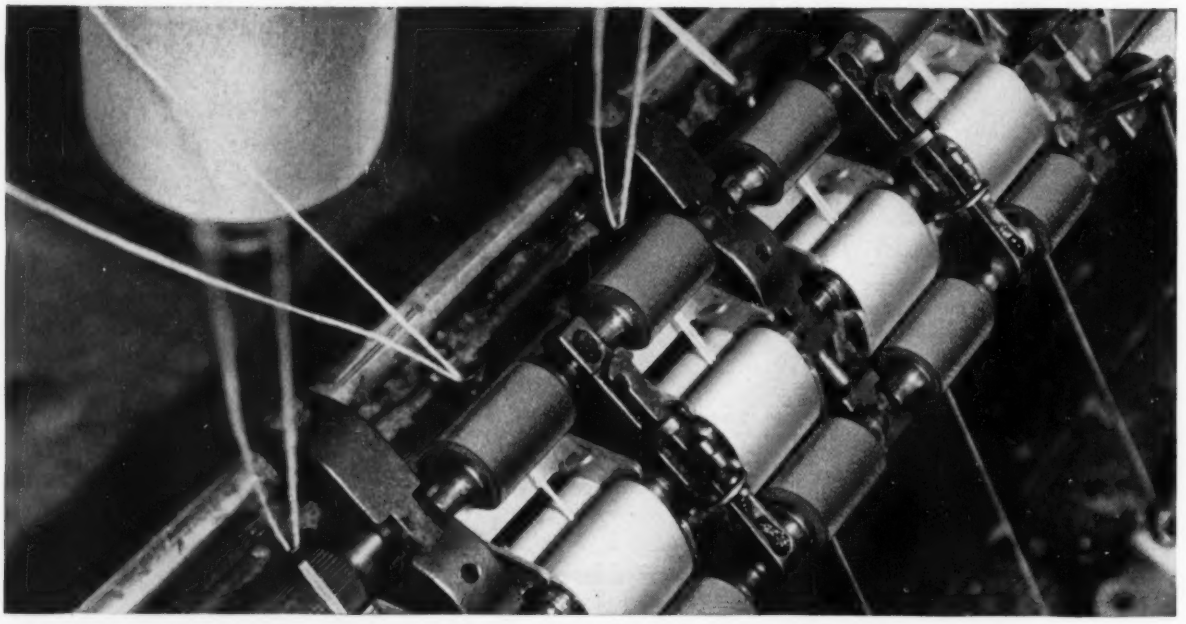
Process Products
SOCONY-VACUUM

Socony-Vacuum Process Products

 For more information, write direct or use Reader Service post card.

Draft better yarn at lower

two famous



New Dayco Cot Containing Ibrocol Successfully Combats Eyebrowing

You can now reduce labor and cot costs in your spinning room and at the same time increase yarn quality. The new Dayco Cot, EW-465, makes this possible. Besides successfully combating eyebrowing, this new cot drafts better quality yarn, requires fewer cleanings of the clearer boards, and runs longer between buffings than any other cot.

This remarkable performance is the result of adding Ibrocol to the composition of the new cot. Its chemical and mechanical action gives the cot a surface that maintains just the right coefficient of friction to remove only the short staple fibers and transfer them well back under the clearer board. Long staple fibers that could build up into eyebrows are left in the yarn. Hence there is less waste as well as less eyebrowing.

And that's not all. The addition of Ibrocol retards slicking and glazing in the new Dayco Cot. Thus the surface retains its coefficient of friction longer, requiring fewer buffings. This means big savings in time and labor.

Dayco Cots contribute in many other ways too toward more efficient drafting. Get the complete story from your Dayco Representative.

Dayco Cots Do This For You—

- **Successfully combat eyebrowing**
- **Fewer lap-ups and ends-down**
- **Fewer buffings; longer between buffings**
- **Don't groove, pit, or develop flat spots**
- **Unaffected by moisture or temperature changes**
- **Fewer cleanings of the clearer boards**
- **Draft better quality yarn**
- **Lower overall cot costs**

cost with these

DAYCO PRODUCTS

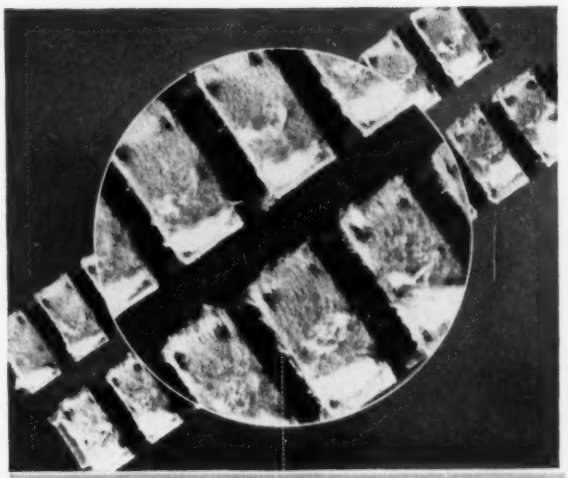
Uniformity of Dayco Long Draft Aprons Saves Time and Money; Ups Yarn Quality

Dayco Long Draft Aprons are manufactured under strict supervision to close tolerances. As a result, their drafting ability remains constant, enabling most mills to get up to 10% more uniform yarn.

They're built for round-the-clock day-in and day-out performance. A neutral axis of special Fortified Cord gives them great strength with just the right amount of stiffness to prevent compressing, wrinkling or distorting. Yet they are completely flexible for long life without cracking or breaking.

You'll find you can start off fast with Dayco Aprons, even after a week-end shutdown. Since Daycos don't stretch or take a permanent set, they start drafting the instant you start the frame.

Whether you use the single apron or two apron system, you'll find that Dayco equipped frames will save you time and money besides producing better quality yarn. See your Dayco Representative soon for the complete story.



Note the difference in waste on the two clearer boards. Top board was used with the new Dayco EW-465 Cot which removes only short staple fibers, packing them well back away from possible pickup by the end.

Whether you use the single apron or two apron system, Daycos can do the job expertly. They have just the right surface for carrying the roving without damage to the front line of cots.

Why It Pays to Equip With Dayco Long Draft Aprons

- Get more uniform yarn
- Fast, positive morning starts
- No moisture or temperature troubles
- Not damaged by hard ends
- Won't crack, curl, or pick up lint
- Drafting ability stays constant
- Lower costs

Dayton Rubber

Since 1905 ©D. R. 1953

Textile Products for Better Spinning and Weaving

Dayton Rubber Company, Textile Division, Woodside Bldg., Greenville, S. C.

Cast-iron end brackets help maintain alignment, assure smooth, quiet starting and running.
Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.
Strong, rigid cast iron frame, smooth contours permit free circulation of air.
Century's

Century Textile motors are ruggedly built for long service life.

TEXTILE MOTOR SHEDS LINT

- STREAMLINE DESIGN
- COOLING AIR FLOW

796

Smooth clean air passages permit cooling air to enter the motor through the end brackets. This steady blast of air circulates near the bearings, around the windings and out through the adequate air passages in the frame.

Lint and textile dust pass through the motor readily, without clogging. This results in clean radiation surfaces, which means that the motor operates at normal temperature.

Century Ball Bearing Textile Motors are lubricated at the factory for the life of the lubricant — under normal service, this is several years without re-lubrication.

However, evaporation or oxidation due to high temperature determines the ultimate life of the lubricant. Century construction permits re-lubrication, when required, without dismantling.

In addition to textile motors, Century builds a complete line of electric motors in sizes from ⅛ to 400 horsepower. They are available in open rated drip proof, splash proof, enclosed fan cooled and explosion proof frames to meet any atmospheric hazard.

For complete information, including dimensions and prices, write today.

Century C MOTORS

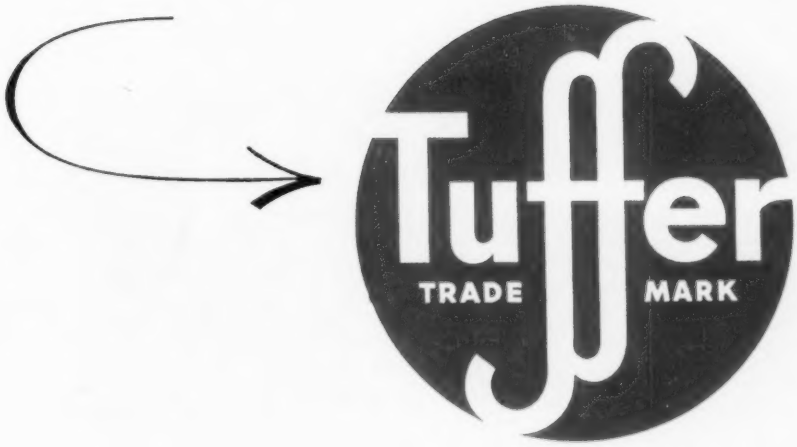
CENTURY ELECTRIC COMPANY

1806 PINE STREET, ST. LOUIS 3, MISSOURI • OFFICES AND STOCK POINTS IN PRINCIPAL CITIES

For more information, write direct or use Reader Service post card.

a modern trade-mark

for a modern product



CARD CLOTHING

Change is inevitable. It has been said many times that we either go forward or slide backward — we never stand still.

If you could compare the TUFFER Card Clothing of today (recognized by hundreds of mills throughout the country as the finest obtainable) with that available when we began 87 years ago you would realize the really great strides TUFFER has made in product development and in manufacture. To symbolize this progress we have adopted a new, modern trade-mark.

This new trade-mark will signify the craftsmanship behind our products and our pride in offering them to you.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

A-2

HOWARD BROS.

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.
Branch: Philadelphia, Pa. *Direct Representation in Canada*

HEIM *Unibal* SWEEPSTICK

The demand for the Heim Unibal Sweepstick has been growing steadily. Now, in its fourth year of production, repeat orders from mill owners, who have proven conclusively through actual performance records that this is a real money saver and a great improvement in smooth operation, indicate its true value.

The Heim Sweepstick incorporates such entirely new and revolutionary principles that one can't help but wonder how the old sweepstick, which gave such an uneven pick action and had a tendency to enlarge its stud hole through constant wear, could have remained unimproved for so long.

The body member is made of resilient, rubber-bonded fabric, but the unusual feature is the self-aligning Heim spherical bearing with a single ball (hardened, polished, bored, and lapped to fit the stud) which operates in a bronze ball race pressed into, and made an integral part of the body — much like a shoulder socket joint.

The cost is modest, and due to its longer, trouble-free life, it cuts "down time" and production losses to an economical minimum.

SWEEPSTICK DATA AND PRICES ON REQUEST

THE HEIM COMPANY

FAIRFIELD, CONNECTICUT

Quality-Integrity

Crater Lake, Cascade Mountains
Southern Oregon

AHCOVATS*

An outstanding range of fast blues.
Bright, navy and dark.

AHCOVAT BLUE BCF

AHCOVAT NAVY BLUE BR

AHCOVAT DARK BLUE BO

* Reg. Trademark

AHCO DYES

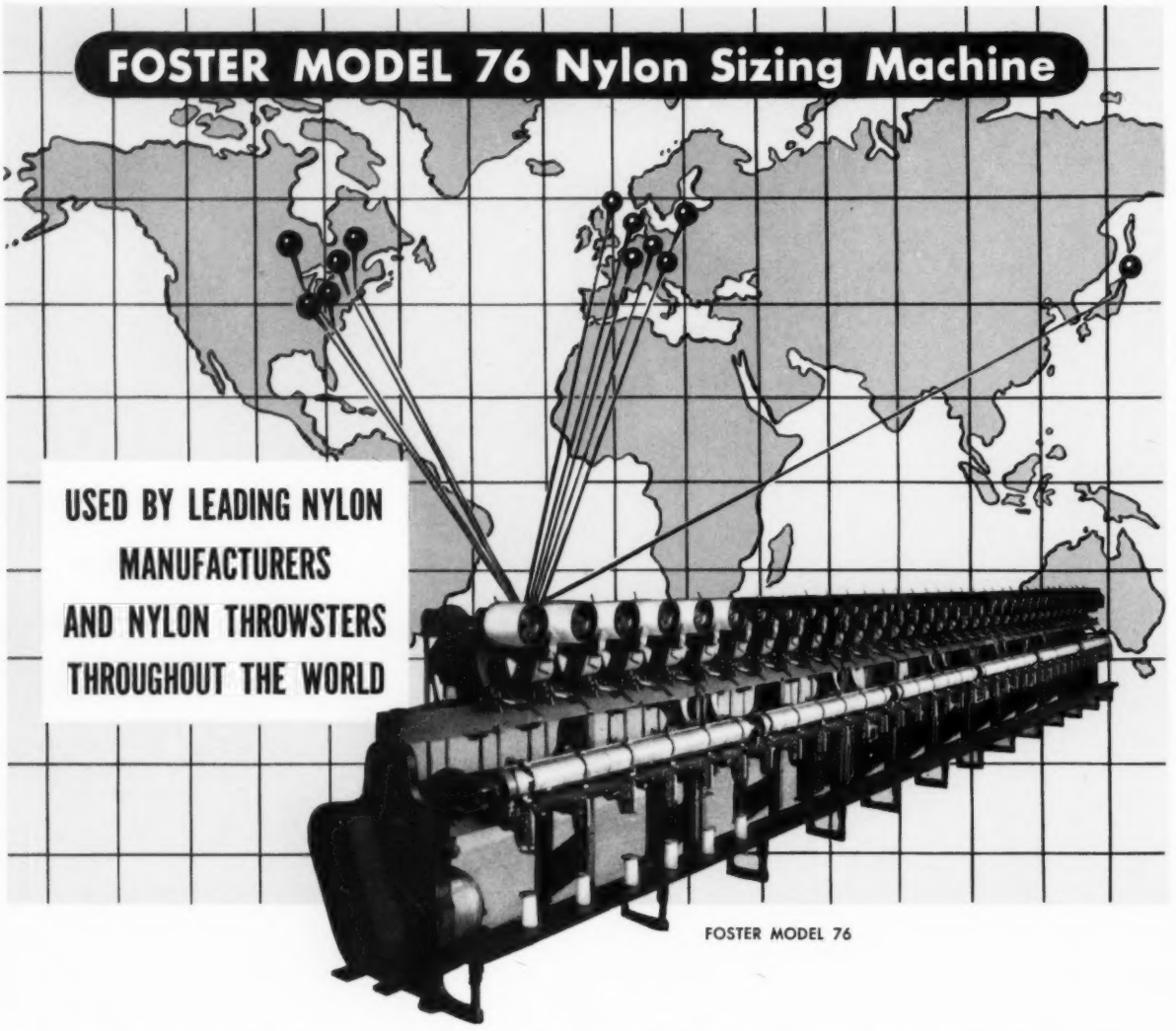
ARNOLD, HOFFMAN

PROVIDENCE • RHODE ISLAND

Associated with Imperial Chemical Industries Ltd.
London, England

ARNOLD, HOFFMAN & CO., INCORPORATED • EST. 1815 • PROVIDENCE, R. I.
Offices: Charlotte • New York • Teterboro • Providence
Plants: Charlotte, N. C. • Cincinnati, Ohio • Dighton, Mass.

FOSTER MODEL 76 Nylon Sizing Machine

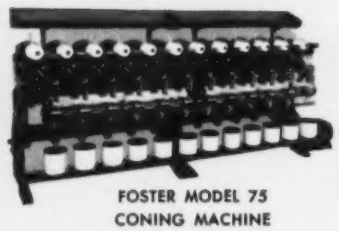


FOSTER MODEL 76

The following manufacturers of nylon have large installations of Foster Model 76 Nylon Sizing Machines and also, in many cases, complimentary installations of Foster Model 75 nylon cone winding machines.

1. Algemene Kunstzijde, Unie N. V., Arnhem, Holland
2. Société Rhodiaceta, Lyons, France
3. Societa Rhodiaceta Italiana, Milan, Italy
4. Société de la Viscose Suisse, Emmenbrucke, Switzerland
5. Deutsche Rhodiaceta, A. G. Freiburg, Germany
6. E. I. du Pont de Nemours & Co., Seaford, Delaware
7. In addition we have shipped Model 76 machines and Model 75 machines to numerous nylon throwing plants in Japan, U.S.A., England and other countries.

Bulletin No. A-97 on request.



FOSTER MODEL 75
CONING MACHINE

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

Southern office, Johnston Bldg., Charlotte, N. C.; Canadian Representative, Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que.; European Representative, Muschamp Taylor Ltd., Ashton-Under-Lyne, England.

SPINNING MACHINERY
FOR COTTON, STAPLE FIBRE AND WORSTED
Design and supply of complete spinning plants
based on latest experience in spinning and engineering
Spares for spinning machinery

We are manufacturing for cotton spinning mills in particular:

Blowing Room Machinery (Trützschler system)
with central full-automatic electric control
Revolving Flat Cards · Drawing Frames · Speed Frames
Ring Spinning Frames · Ring Doubling Frames

and for wool combing mills and worsted spinning mills:

Combers · Gills Intersecting · Open Gills
Porcupine Drawing Boxes · Ring Spinning Frames
Fly Spinning Frames · Ring Doubling Frames
All Machinery for French system

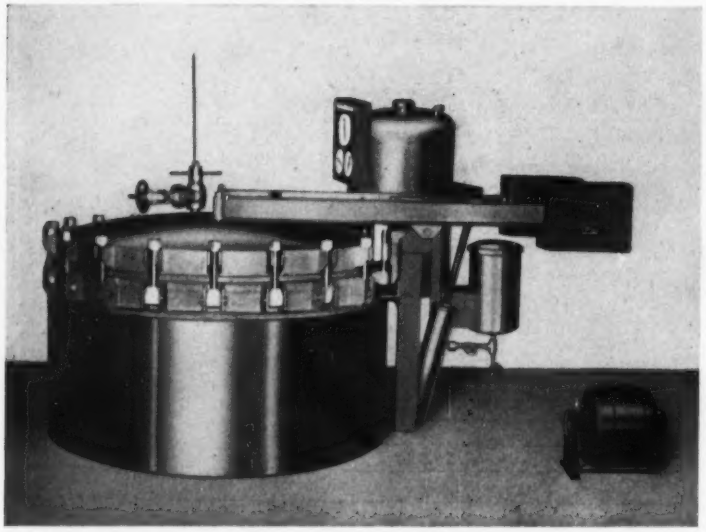
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT

Ingolstadt/Oberbayern

INGOLSTADT

The Fleet Line for Synthetics:

HY-TEMPERATURE STOCK and TOP DYE KETTLE



It's New!

It's Different!!

It's Better!!!

500# Stock and/or Top Dye Kettle. Built under ASME Code, has stamp of approval of Hartford S.B.I.&I. Co.

CHECK THESE FEATURES

1. Dyeing Cycle Considerably Reduced
2. Economy of Dyestuffs, Chemicals and Time — High Exhaustion of Bath
3. Effective Insulation
4. Pressurized Shading Tank
5. Dye Boil Up Tank
6. Ejector or Pump Feed for Dye
7. Heat Exchanger — No Open Coil
8. Constant Liquor Volume
9. Counter-Balanced Air-Operated Cover
10. Sampling Without Loss of Temperature or Pressure
11. Pressurized Expansion Tank

NOTE: This Hy-Temperature Stock and/or Top Dye Kettle is entirely new, engineered from start to finish to solve problems of dyeing synthetics. It is *not* merely a re-design or adaptation of any existing model!

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

Agents: Paul A. Merriam, 1491 Broad St., Prov., R. I. · Charles H. Dunker, 1236 So. Maple Ave., Los Angeles 15, Calif. Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill. · F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C.

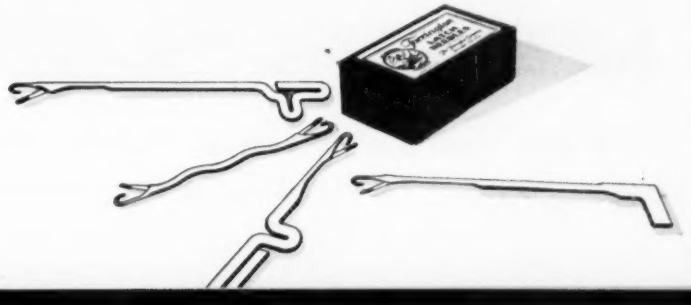
GOOD KNITTING

DEMANDS GOOD NEEDLE SERVICE

FOR THE RIGHT NEEDLES AT THE RIGHT TIME...

RELY ON TORRINGTON

Torrington's needle service is built on volume production backed by established, large-scale buying of essential raw materials. Our three complete needle manufacturing plants are equipped and staffed to meet your every requirement. You can always depend on Torrington for complete service.



THE TORRINGTON COMPANY
Torrington, Conn., U.S.A. · Established 1866
Branches: New York · Philadelphia · Chicago · Boston
Greensboro, N. C. · St. Louis · Bedford, P. Q.—Toronto, Canada
Pacific Coast Representative: E. G. Paules,
1762 West Vernon Ave., Los Angeles 37, Calif.
Broadgate House, 7-10 Eldon St., London E. C. 2, England

Actual mill results show how Weaving Machine can

HERE'S EXACTLY WHAT YOU CAN EXPECT FROM THIS NEW MACHINE..

ELIMINATES

BOBBIN WINDING

BOBBIN STRIPPING

BOBBIN INSPECTION

BOBBIN STORAGE

REDUCES

TRANSPORTATION

YARN INVENTORY

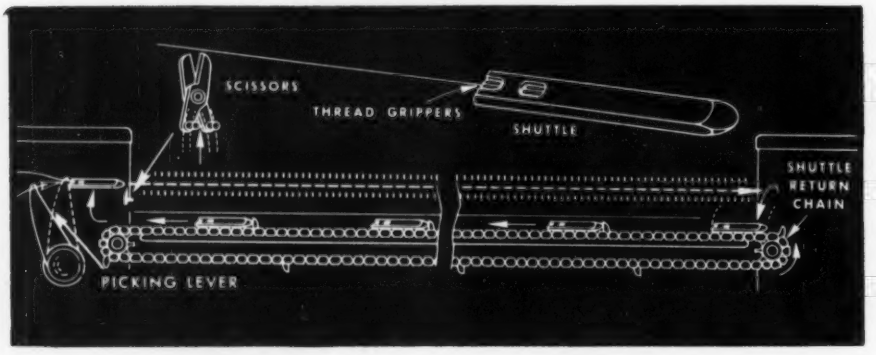
HANDLING FILLING

OVERHEAD

SAVES YOU — MENDING — SECONDS — LABOR — FLOOR SPACE

GIVES YOU — GREATER PRODUCTION | HIGHER QUALITY | IMPROVED WORK AREA | EASIER OPERATION

How new principle of weaving speeds production!



Filling is drawn from large stationary cones through a guide and is tensioned by mechanical fingers to be grasped by small shuttle. Shuttle is then propelled across machine at high speed through tunnel of guides—without touching warp yarn. Filling is gripped at each end and ends tucked in to form selvages. Shuttles are returned to picking position by conveyor. A number of shuttles are used, the quantity depending on width of machine and width being woven.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY

For more information, write direct or use Reader Service post card.

new Warner & Swasey-Sulzer improve your mill's operations!

EXTENSIVE PRODUCTION RECORDS—in every one of the leading mills where it has been installed—prove that the new Warner & Swasey-Sulzer Weaving Machine delivers many operational advantages never before possible!

Weaving worsteds, woolens, spun synthetics and blends, this revolutionary new machine produces better quality fabrics, in greater volume, at less cost. It's a machine that will pay for itself fast!

If you'd like to learn exactly how this new machine can improve *your* mill's operations, call in your nearest Warner & Swasey Field Representative and get all the facts.

MODELS		
	M-2820	80" reed
	M-2860	95" reed
	M-2960	110" reed

- 240 picks per minute
- One or more widths of cloth at one time
- Larger, stationary filling package

WARNER & SWASEY

TEXTILE MACHINERY DIVISION

BRANCH OFFICES:

61 Rivulet St., North Uxbridge, Mass.
6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Ga.
1820 Browning Ave., Charlotte, N. C.

MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

FORMULA *for performance . . .*

. . . NOT SPECULATION

when you specify PERKINS Rolls. PERKINS Rolls have behind them the longest and broadest experience in the Roll-making industry.

B. F. PERKINS & SON, inc.
Engineers and Manufacturers
HOLYOKE • MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

He found STATIC fun... but you don't

In 1672, Otto Von Guericke discovered how to chase a feather around the room with his newly invented electrified sulfur globe. Some fun!

But Otto didn't have the problem that you have—of making static-loaded textile fibers behave as required. For you, electrical repulsion proves only a headache, no fun.

Nopco didn't discover static electricity, to be sure. But we have developed new and successful ways to control static in textile processing... have pioneered the development of anti-static chemicals for natural and synthetic fibers alike.

You'll find the use of Nopcostat* fiber treatments invaluable. For Nopcostats are remarkable static reducers.

More. Each Nopcostat lubricant is designed to give you "balanced" performance and assure not only effective static control, but...

Proper coefficient of friction (fiber-to-metal)
Fiber-to-fiber cohesion
Freedom from gumminess
Easy and thorough scouring

Nopco representatives are technically trained—will gladly work closely with you in the selection and application of the Nopcostat suited to your needs. Write for further information now.

*Reg. U.S. Pat. Off.

NOPCO

EVOLVED THRU RESEARCH

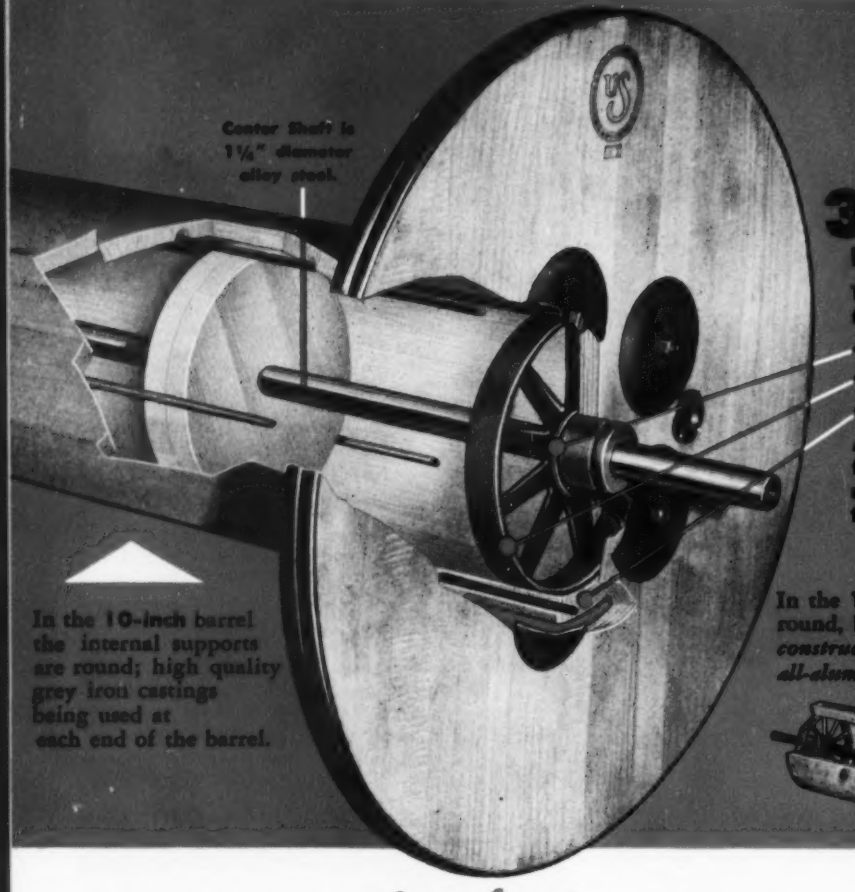
NOPCO CHEMICAL COMPANY Harrison, N. J.

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

For more information, write direct or use Reader Service post card.

take a close look at these WARPER BEAMS . . . . . .

Some of the construction features are unique with US



In the **10-inch** barrel the internal supports are round; high quality grey iron castings being used at each end of the barrel.

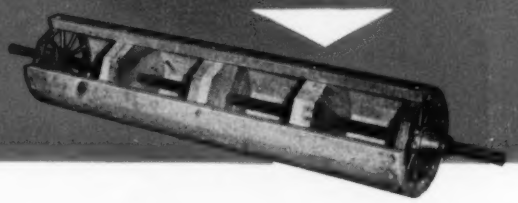
3-POINT SUPPORT FOR THE BEAM HEAD

The head is bolted with tie rods *firm and flush against* the

- **shoulder at hub of casting**
- **periphery of casting**
- **ends of staves**

All U S Warper Beams have this feature, which provides additional resistance against deflection during the build-up of the beam.

In the **12-inch** barrel the internal supports are not round, but are of a ten-sided design *for extra construction strength.* At each end of the barrel *all-aluminum castings* are used.

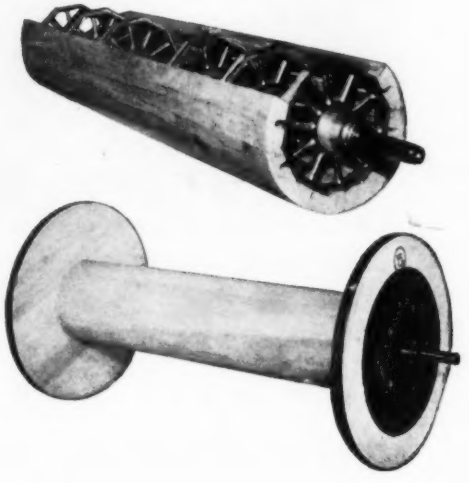


HERE ARE SOME *plus features* FOUND IN US HIGH TENACITY **RAYON** TIRE CORD WARPER BEAMS

Internal Supports consist of *six all-aluminum castings,* offering great strength with lightness in weight.

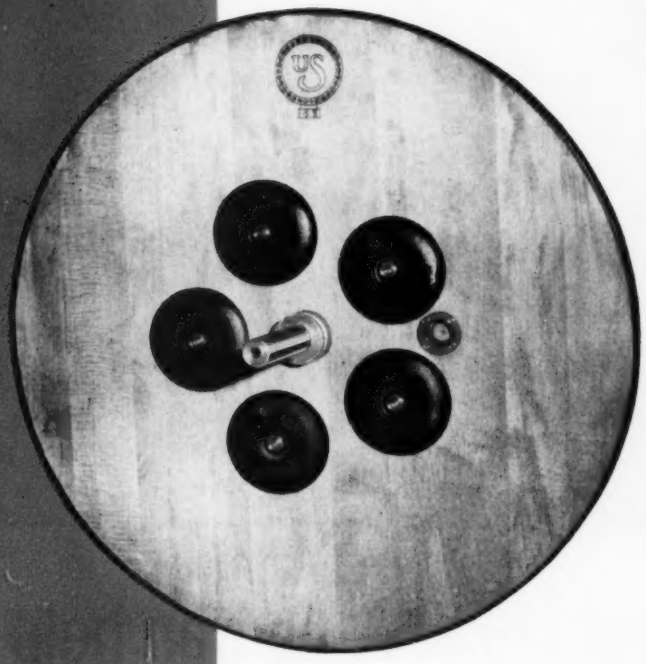
Beam Heads are maple, 1¾" thick, *four-ply* cross-laminated at 90°, which has been proven to be the strongest construction for high tenacity rayon beams.

Reinforcing Tension Plates are 20" in diameter, of ¼" alloy sheet steel. The engineered dished-form design enables the beam heads to withstand tremendous pressure by varying the torque on the tie rod nuts. The feathered edge on those plates avoids damage when "nesting" the beams.



. . . . for COTTON

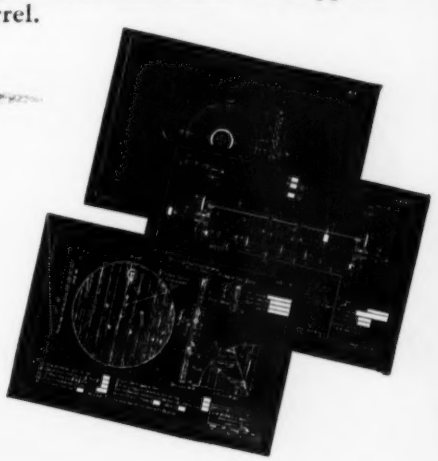
and HIGH TENACITY **RAYON** *TIRE CORD*



1. **Five cast iron tension plates,** bolted onto heavy steel tie rods, can be *individually tightened* to relieve stress or strain *on any section* of the head. These plates have a *tapered edge,* thus preventing any possible damage when the beams are "nested" for storage.
2. **Heads** are 3-ply cross-laminated seasoned hardwood, 1½" thick.
3. **Tires** are extra heavy (3/32") steel . . . grooved, heated and shrunk-fitted onto the heads for tighter assembly. Tires can be of rubber if preferred.
4. **For rugged barrel construction,** the three additional internal supports are 2¾" thick, made of 2-ply Eastern Pine, at 90° angle. Barrel staves are kiln-dried Eastern Pine.
5. **Substantial saving in weight** of both beams is accomplished through the use of the five cast iron tension plates. Further weight saving in the 12" beam is brought about by having the two *aluminum end supports* in the barrel.

SEND FOR SET OF BLUEPRINTS

On request, you will receive by return mail a set of drawings showing the detailed construction features of U S Warper Beams, Beam Heads, and Tension Plates. Please specify whether you wish them for **COTTON** *or for High Tenacity* **RAYON** *Warper Beams.*



U S BOBBIN & SHUTTLE CO.

Manufacturing Plants

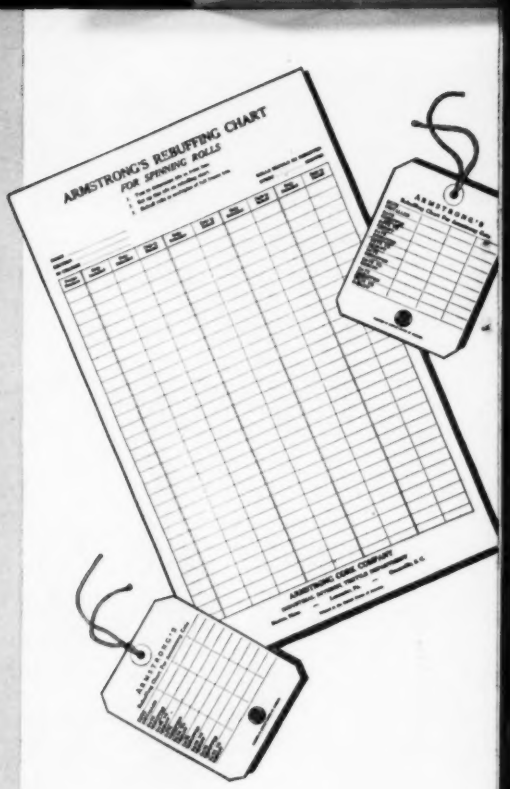
LAWRENCE, MASS. • GREENVILLE, S. C. • KEENE, N. H.

General Sales Office LAWRENCE, MASS.

Southern Division Headquarters So. Carolina National Bank Bldg., GREENVILLE, S. C.
CHARLOTTE, N. C. JOHNSON CITY, TENN. FORT MILL, S. C. LaGRANGE, GA.
PHILADELPHIA, PA. PROVIDENCE, R. I. MINNEAPOLIS, MINN.
DALLAS: O. T. Daniel, Textile Supply Co. LOS ANGELES: E. G. Paules, 1762 W. Vernon Ave.
CANADA: W. J. Westaway, Montreal, Que., Hamilton, Ont.

THE SIGN OF QUALITY AND SERVICE
US
SINCE 1857

To set up a practical COT BUFFING SCHEDULE



Call your Armstrong man . . . he can help

YOU SAVE TIME AND TROUBLE when you call in your Armstrong man. His years of textile experience can help you solve your roll covering problems. Call him in anytime he can be of service to you.

A good, workable re-buffing plan for your roll covers can benefit you in several ways.

First, it helps you spin more uniform yarn because your cots always are in good running condition. Second, it provides maximum life from your roll covers because they are buffed no more often than necessary. Third, a systematic buffing schedule helps insure more efficient roll shop operation.

A good way to get started on a streamlined re-buffing program is to call in your Armstrong man. He can help you organize things to provide a uniform flow of work in and out of your roll shop. And when the program is set up, he'll provide you with master buffing charts and frame tags that make it easy to stay on the schedule you adopt.

This is just one of many ways your Armstrong man can help you get the most out of your cots. Call him in whenever you have a roll covering problem. You'll find his specialized training and experience mean

ARMSTRONG'S

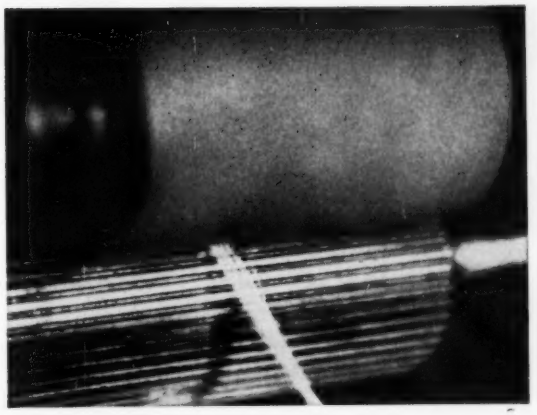
you get better running work, maximum cot life

sound answers to almost any roll covering question that might come up in your particular operation.

Your Armstrong representative has another big advantage. From his complete line of Armstrong's Roll Covers, he can supply the right cot for every type of frame and fiber.

He has cork if cork is needed. And he has a wide variety of long-wearing, lap-resistant Accotex® Cots, available in straight rubber and in cork-and-rubber combinations. Each Accotex formulation is made in varying degrees of firmness to give you the exact cushion you need.

Whenever you have a problem concerning roll covers, be sure to call in your Armstrong man. If yours is a rush call, he usually can be at your mill in 24 hours or less. To get Accotex Cots for testing, just ask him or write to Armstrong Cork Company, Textile Products Dept., 8303 Arch St., Lancaster, Pa. All Accotex products are available for export.



Lap-resistant Accotex Cots last up to 6 years. Only a minimum of re-buffing is needed to keep Accotex Covers in condition to spin quality yarn for as long as six years. In addition, they practically eliminate lapping. Every Accotex Cot contains certain electrolytes that remove the basic cause of lapping—the attraction between electrical charges on both cot and fiber. By neutralizing the charges in the cot, these electrolytes let broken ends run free long enough to drop down onto the scavenger roll and thus prevent lap ups.

ACCOTEX COTS

now available

CELAPERM*

Celanese's new color-pigmented filament acetate yarn is available in the following *fashion-approved* colors:

N937	Yellow Green	N383	Blue (Royal)
N974	Green	N944	Navy
N935	Grey	N948	Blue Green
N956	Brown	N945	Red (Dark)
N988	Red (Bright)	N987	Pink
N951	Yellow	C-6	Rose
N950	Blue (Light)	C-3	Green (Mint)
N957	Blue (Medium)	#16	Black

Celaperm stock is available in 100 and 150 deniers.
Other deniers from 45 to 600 are available on special order.
Celaperm comes on 4-pound cones or can be delivered on section beams.
Celaperm is available in 200-denier thick and thin yarns.

For Celaperm yarn color cards, prices, delivery dates, promotional plans, and for technical assistance in the most efficient utilization of these new yarns, see your Celanese representative or contact any of the following branch offices:

New York 16, N. Y.	180 Madison Avenue
Boston 10, Mass.	140 Federal Street, Room 1602
Camden, N. J.	300 Broadway
Charlotte 2, N. C.	1603 Liberty Life Building

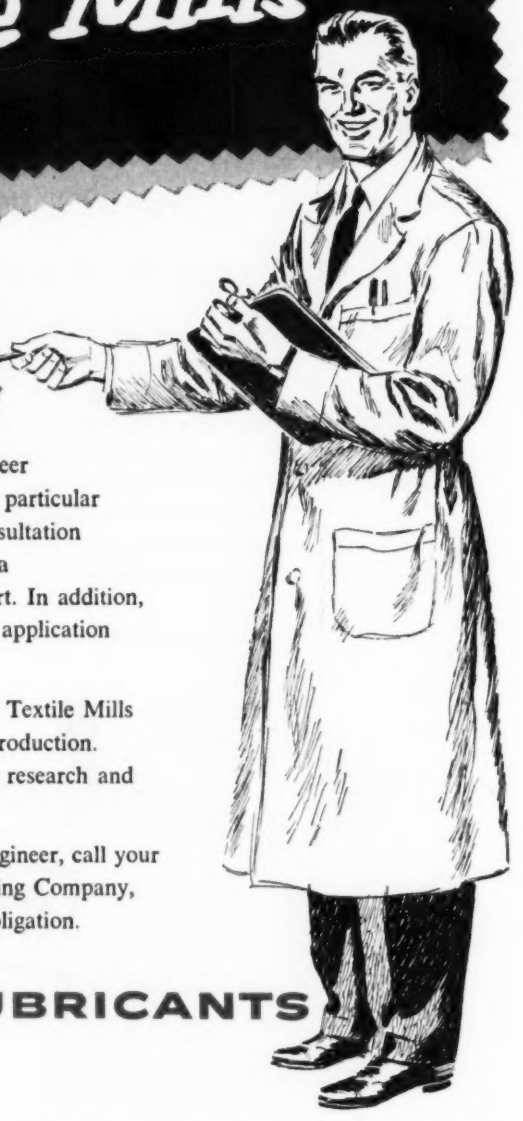
Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

Celanese* CELAPERM*

THE PERFECTED COLOR-PIGMENTED ACETATE YARN

*Reg. U. S. Pat. Off.

Sinclair offers Lubrication Counsel to Textile Mills



...Engineers give Personal Attention to Individual Mills!

At your invitation, a Sinclair Textile Lubrication Engineer will survey your mill . . . study your machines and your particular lubrication problems. After his thorough study and consultation with your maintenance superintendent, he will prepare a comprehensive, detailed lubrication and procedure chart. In addition, he will brief your personnel about lubricants – proper application . . . handling and storage . . . waste elimination.

Sinclair lubrication counseling has helped hundreds of Textile Mills to retard wear . . . cut maintenance costs . . . step up production. Our representatives are backed by constant laboratory research and industrial experience.

To get the counsel of a Sinclair Textile Lubrication Engineer, call your local Sinclair Representative or write to Sinclair Refining Company, 600 Fifth Avenue, New York 20, N.Y. There is *no* obligation.

SINCLAIR TEXTILE LUBRICANTS

STRETCH OUT YOUR STAINLESS, TOO

There *are* ways to stretch out your supply of stainless.

For example, you may be using a grade or finish of stainless that is in extreme demand when another similar one, not as tight, could do the job adequately.

Our metallurgical staff and stainless fabricating specialists are ready to help you look into this matter and to advise you on more readily-available types of stainless that will do a satisfactory job. Feel free to call on us for this specialized help.

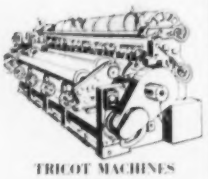
CRUCIBLE first name in special purpose steels

53 *years of Fine steelmaking* **STAINLESS STEEL**

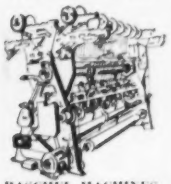
CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REZISTAL STAINLESS • REX HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS

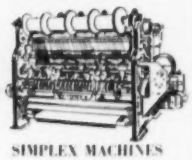
THE REINER LINE:



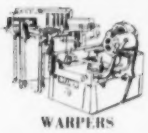
TRICOT MACHINES



RASCHEL MACHINES

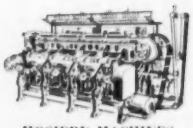


SIMPLEX MACHINES

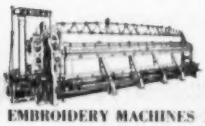


WARPERS

CREELS

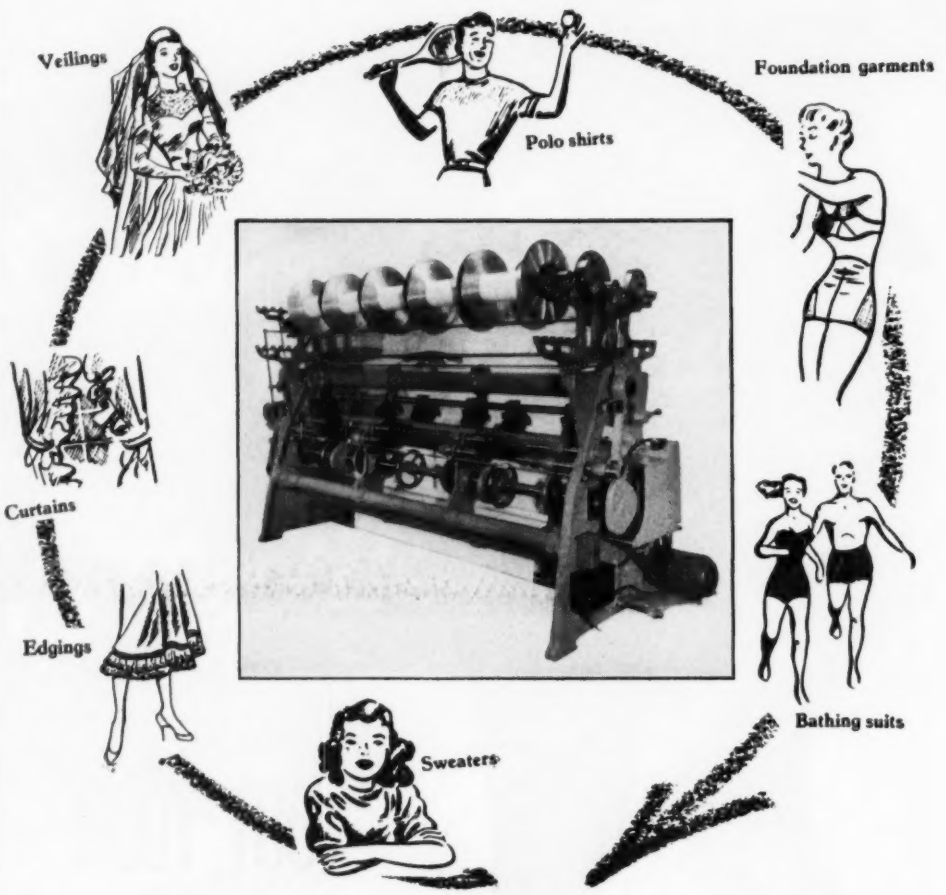


HOSIERY MACHINES



EMBROIDERY MACHINES

Ready spare part service available for all Reiner equipment.



RASCHEL—A Growing Market

Backed by thirty years of know-how in the raschel field, we present a new raschel machine model, stressing simplicity of operation and versatility in fabric construction and design. On this unit you can readily produce at highest speeds exquisitely constructed laces and veilings or such coarse materials as draperies, carpets, and rugs. All types of yarns, elastics, blends or mixtures, metallic or plastic, can be utilized, and their application in a wide variety of end products opens new and profitable market areas. Machine adjustments for change-overs are simple and present no problem.

The Reiner Raschel Machine is offered in knitting widths of 100" and 112"—up to 8 guide bars—1 or 2 needle bars—stitch comb—chopper plate—crepe attachment—elastic beam feed—automat—plush points—gauges 24, 36, 40, or to your specifications.

In addition, Reiner offers a full line of warpers and creels—Complete warp knit mill equipment from one source. A richly illustrated catalog is yours for the asking.

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 — 550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY

PRE-EMINENT FASTNESS

THIS IS YOUR HALLMARK OF QUALITY–
A GUARANTEE OF CONTROL WHICH WILL IDENTIFY
ALL INDANTHRENE SHIPPING CONTAINERS

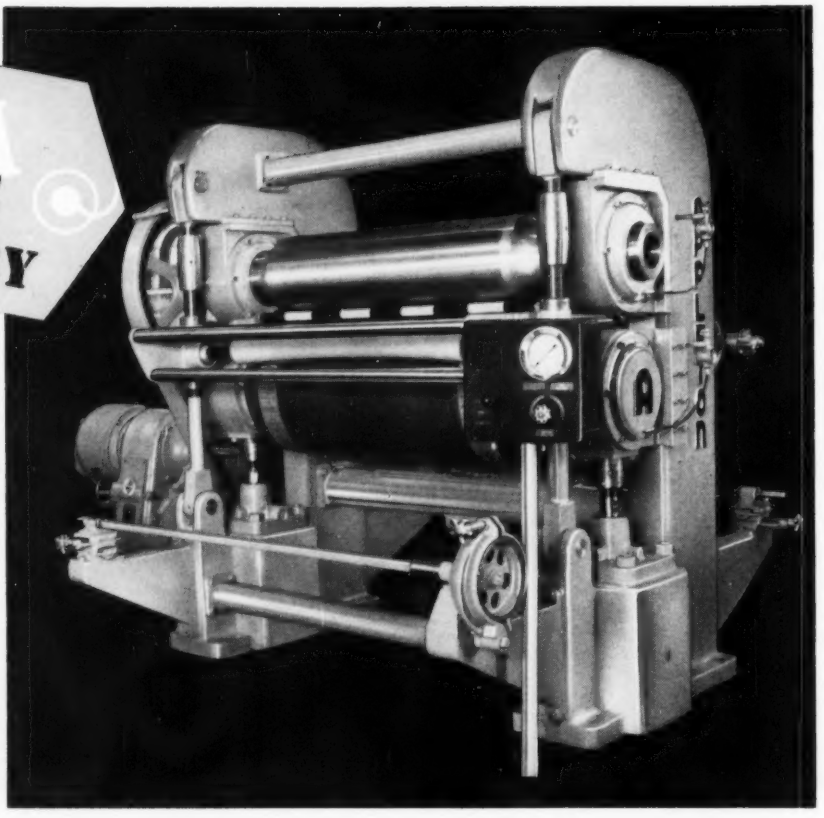
gdc

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

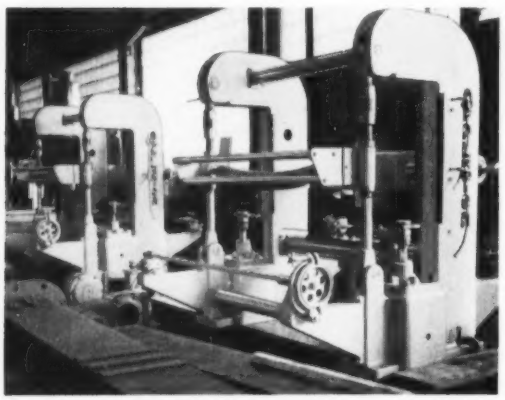
BOSTON • CHARLOTTE • CHICAGO • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO

to THE TEXTILE INDUSTRY



APPLETON TWO-ROLL 50-TON HYDRAULIC SCHREINER CALENDER

Designed for maximum production and minimum maintenance, this Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender is particularly well adapted for "Everglaze" schreiner work. Both rolls are mounted in anti-friction bearings, with force feed oil lubrication. A gas burner, water-cooled cylinder, and a variable speed motor to operate on A. C. current are other salient features. Some of America's finest textile machinery is made by Appleton . . . invite us in to discuss your requirements . . . a call or a card will bring our representative, at no obligation, of course.



Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender Under Construction

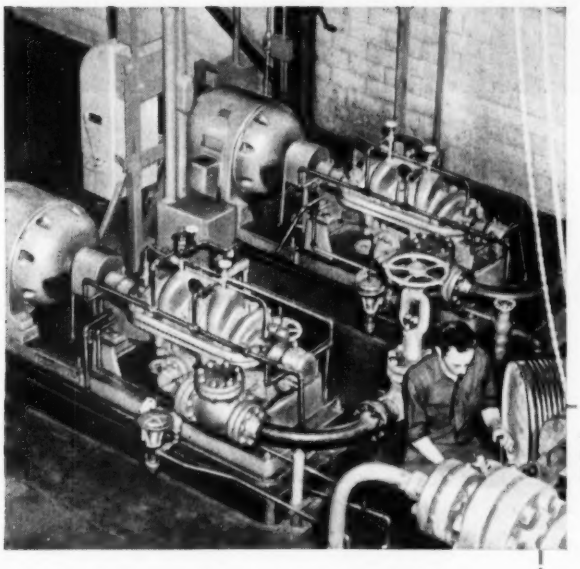
APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF PULP, PAPER AND TEXTILE MILL MACHINES

Plastics plant saves $4,000 in one year!*

Read how you, too, can save with . . .

PURE OIL INDUSTRIAL LUBRICANTS



Pure Oil specializes in top-quality industrial oils and greases designed to do several *different* jobs—instead of one specific job.

And to do each job *equally well.*

Regardless of the type of machinery you have in your plant, our industrial engineers can nearly always help you to reduce your lubricants inventory . . . simplify your lubricating procedure . . . minimize waste and error.

Mail coupon today for free "Simplify and Save" booklet giving full details on how to start a labor-saving, money-saving, lubrication program in your plant.

*Oxygen pitting was destroying the high pressure water pumps in General Electric's Coshocton, Ohio, laminated plastics plant. Rod packing had to be replaced every three days. Pure Oil's sales representative suggested adding PUROSOL No. 10 to the water. Result: damage stopped—and a saving of $4,000 a year.

The Pure Oil Company Industrial Sales Dept. T-33
35 East Wacker Drive, Chicago 1, Illinois
Please send me your free "Simplify and Save" booklet.

Name_____

Position_____

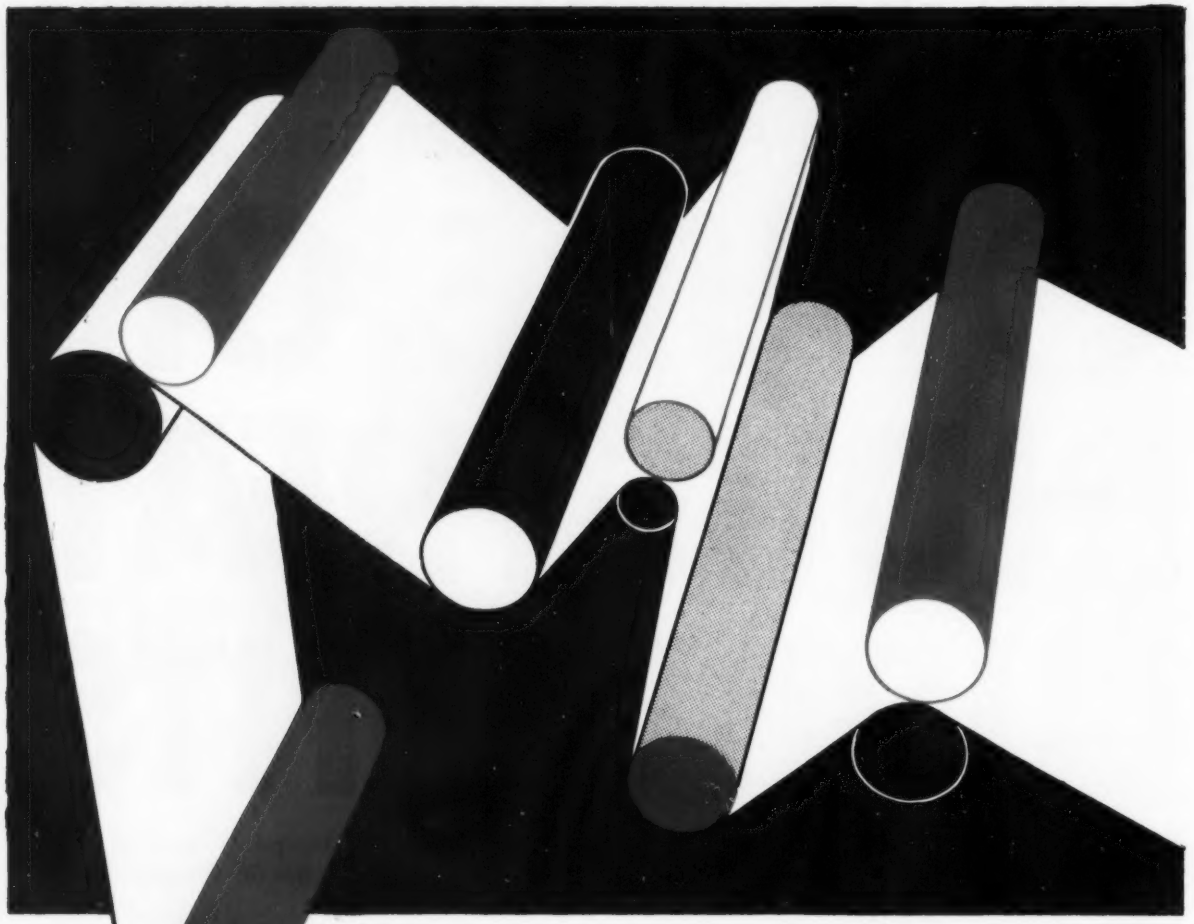
Company_____

Address_____

City_____ Zone_____ State_____

Be sure with Pure

Sales offices located in more than 500 cities, including: Atlanta • Birmingham • Charleston • Charlotte • Chattanooga • Chicago Columbus • Indianapolis • Jacksonville • Madison • Memphis • Miami • Milwaukee • Minneapolis • Pensacola • Pittsburgh • Richmond



Lasting Crowns—More use per Dollar

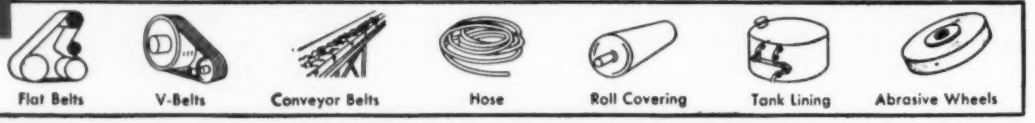
MANHATTAN RUBBER COVERED ROLLS

You save money on rolls and lower your production costs because you get perfect and durable crowns to *your* specifications . . . Just the right density . . . Just the precise dimensions you demand. That's because Raybestos-Manhattan custom-covers roll cores to meet the special needs of your plant. Manhattan Rubber Covered Rolls hold their crowns longer and their density permanently, giving you uniform, trouble-free production. Talk it over with the R/M specialist nearest you, next time you need rolls rubber covered.

ROLL COVERING PLANTS AT PASSAIC, N. J. — NEENAH, WISC. — NORTH CHARLESTON, S. C.

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



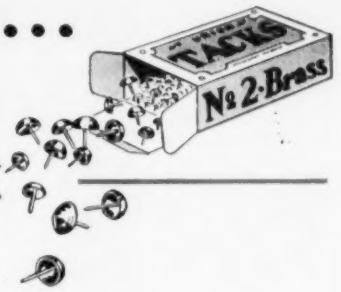
Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
Asbestos Textiles • Teflon Products • Packings • Sintered Metal Parts • Bowling Balls

MR-911

For more information, write direct or use Reader Service post card.

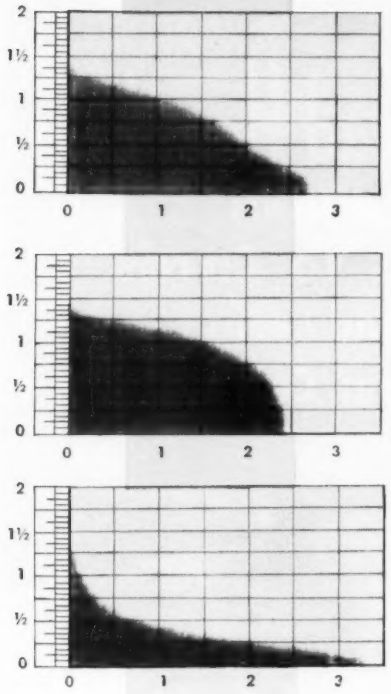
When you get down to brass tacks...

here's what a comber should do!



It should:

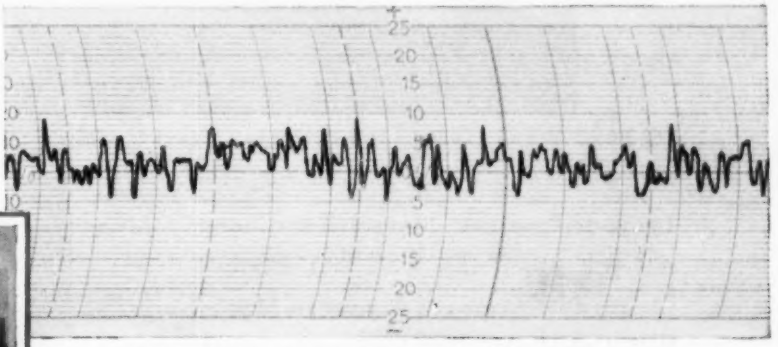
- Produce high quality sliver with low variation.
- Reduce neps to the lowest possible amount. The ratio will vary from 3:1 to 6:1 depending on the staple and the amount of noil.
- Remove practically all of the short fibers and few or none of the long.
- Produce at a high rate compatible with space required, investment costs, and total combing expense.
- Operate with a low productive cost per pound.
- Be easy to adjust, and hold the settings between overhauls.
- Run at high efficiency, requiring minimum expense to maintain, lubricate, and repair.
- Function so simply and smoothly that operator efficiency is high.



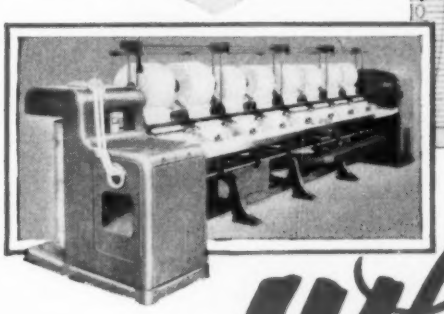
The above fiber arrays show the quality of work done by the Whitin "J" Comber. At top, ribbon lap; center, combed sliver; at bottom, noil. Note that practically all of the short fibers have been removed and only a very few long fibers combed out.

...and that's just what the WHITIN model "J" does!

For all-round efficiency, versatility, and superiority of design, it has been acclaimed in both the United States and Europe. Thoroughly tested in mill installations ranging from a few to as many as 200, the Model "J" Comber is recognized as the finest comber yet developed.



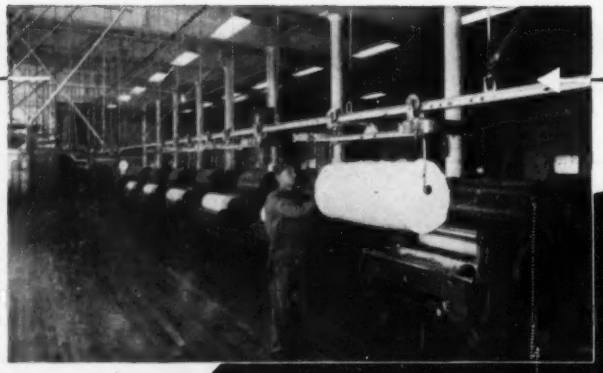
Section from Uster graph made in mill test, Whitin "J" Comber sliver. The stock is 55 grain Pima. Test data: average variation, 17.6 per cent; maximum variation, 30 per cent.



Whitin MACHINE WORKS

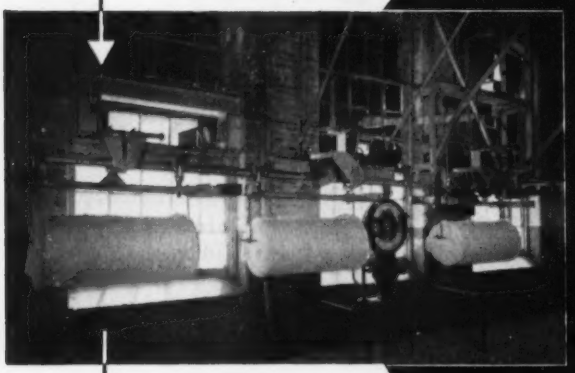
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, N. C. • DEXTER, ME.



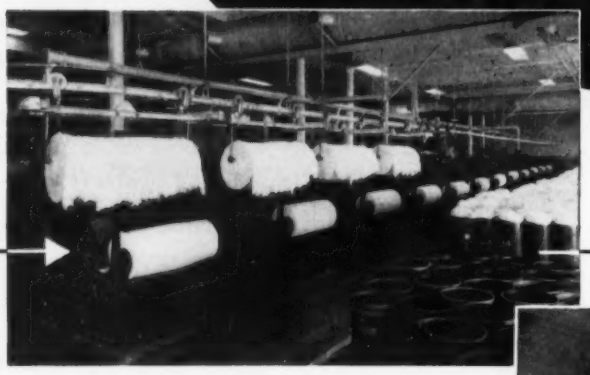
At the scale lap carriers move across scale section when weight is within tolerance and roll to the card room—all automatically. Signal sounds when weight is off tolerance requiring release by picker tender.

Lap Carriers roll by gravity from pickers to scale.

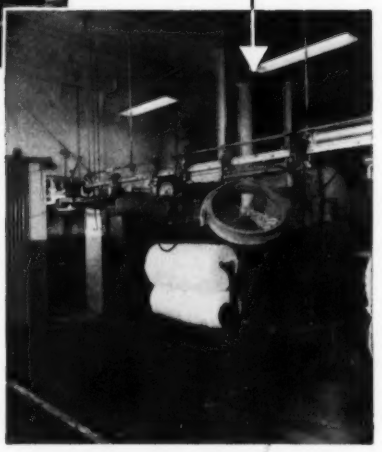


Overhead Handling *delivers* Laps to Cards *and keeps* Card Room Ceiling Clean

Train of laps move constantly throughout the card room for manual creeling of cards.



Empty carriers return to pickers. Note the high-velocity fan which sends blast of air to ceiling preventing lint accumulation.



Let your American MonoRail engineer tell you about the time and money-saving advantages of American MonoRail Overhead Handling equipment and cleaning. Just drop us a line.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

How to put the finger on HIDDEN MAINTENANCE COSTS!

. . . ask a Gulf Sales Engineer to check your lubrication practice

What percentage of your machinery maintenance costs can be charged to faulty lubrication? How many replacement parts? How many man-hours? How much down time?

Gulf Sales and Staff Engineers are particularly interested in those hidden maintenance costs which can be substantially reduced by improved lubrication practice.

A Gulf Sales Engineer can put his finger on hidden maintenance costs in your mill just as he has in other progressive textile mills. Write, wire, or phone your nearest Gulf office and ask a Gulf Sales Engineer to call.

GULF INDUSTRIAL LUBRICATION

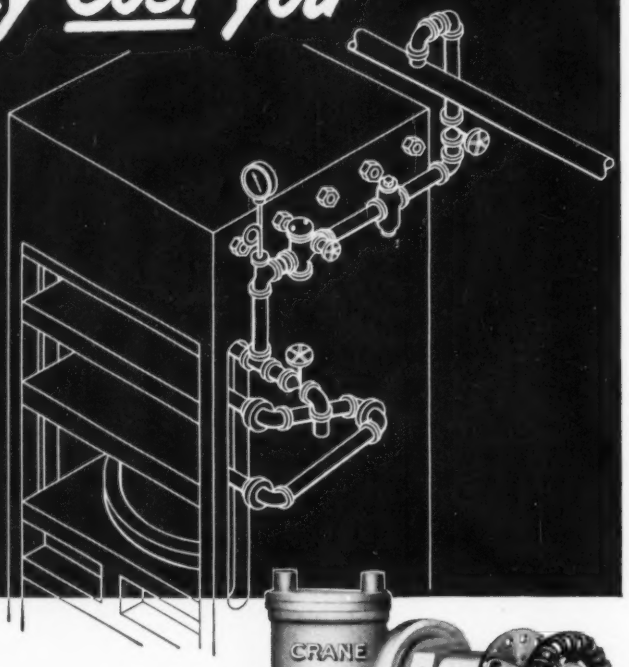
Gulf Oil Corporation • Gulf Refining Company
PITTSBURGH 30, PA.

It's not what you Pay for Valves ...it's what they Cost you

on Steam Heated Machinery

for example

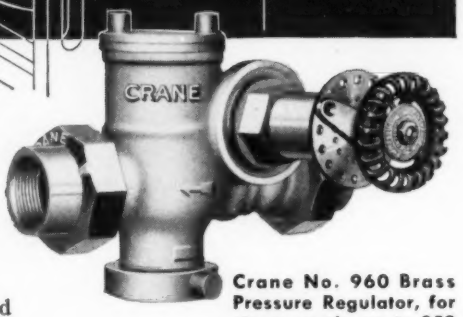
(A Case History)



What you pay for valves is not the final criterion of value. Not when maintenance can quickly equal or exceed purchase price. A thrifty buyer knows his maintenance; knows also there's bigger value in better quality.

Take the case at Dryden Rubber Division of Sheller Mfg. Corp., Chicago. More than 25 years ago, this plant started using Crane Pressure Regulators on steam lines to molding presses. 225 are in service today; many still are the original installations, still working faithfully. The records for all Crane regulators, regardless of age, show no maintenance cost other than prescribed periodic routine servicing.

Today, more than ever, you need greater assurance of quality in piping materials. You get it in Crane Valves—the recognized standard of quality with thrifty buyers everywhere. Your big Crane Catalog offers complete selections for all needs. Your Crane Representative is always ready to serve you.



Crane No. 960 Brass Pressure Regulator, for steam or air, up to 250 psi. See your Crane Catalog.

CRANE VALVES

Crane Co., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas.

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Here's Why Dirt and Lint Can't Stop this Motor

Wide Open Design Allows Powerful Fans To Sweep Lint And Dirt Right Out Of Quick-Clean Motor!

YOU HAVE NO MOTOR PROBLEM from lint-laden atmospheres when you use *Quick-Clean* textile motors. *Quick-Clean* motors have wide open passages for cooling air and powerful fans to sweep lint and dirt right out of the motor. Inside surfaces are smooth and hard so lint cannot lodge anywhere. Air passages are shaped for smooth air flow.

Quick-Clean motors also save you money with sealed bearings which eliminate usual expensive bearing maintenance procedures. Grease or oil cannot leak from the bearings to soil materials or gather lint and dirt. Lint and dirt cannot enter the bearing. Ask your nearest Allis-Chalmers Sales Office about the *Quick-Clean* textile motor. Or write for Bulletin 51B6055. Allis-Chalmers, Milwaukee 1, Wis.

A-3970

Quick-Clean, Texrope and Vari-Pitch are Allis-Chalmers trademarks.

Sold . . .

Applied . . .

Serviced . . .

by Allis-Chalmers Authorized Dealers, Certified Service Shops and Sales Offices throughout the country.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

TEXROPE V-belts in all sizes and sections, standard and *Vari-Pitch* sheaves, speed changers.

PUMPS — Integral motor and coupled types from ¾ in. to 72 in. discharge and up.

ALLIS-CHALMERS

WHAT *Life-Line* REALLY DELIVERS IS MORE SERVICE...LESS SERVICING

The way to lick lint and dust is to keep it out!

And here's a drive team that really keeps it out!

Look at the extra features of the Loom Motor Starter. A special neoprene gasket forms a positive, continuous seal between case and cover. Pressure from cover-retaining screw makes sure every crevice is filled with pliable neoprene. It's the only starter approved by the Associated Factory Mutual Fire Insurance Companies.

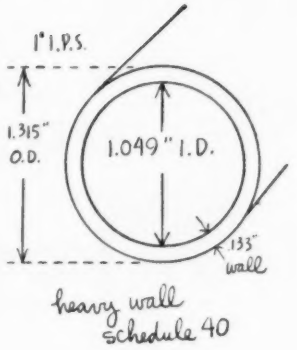
And check the extras on the totally enclosed Loom Motor, too. No chance for lint or dust to clog windings. Notice, too, there are no greasing nipples or cups on the motor. Pre-lubricated, factory-sealed bearings need no lubrication. Thus, outages from both lint clogging and improper lubrication are eliminated.

Together these two make the best drive team for your weave-room equipment. Maintenance has been practically engineered out. Ask your Westinghouse representative for a free copy of, "Motors and Controls in the Textile Industry". Thirty-six well-illustrated pages show how to overcome problems in drive selection. Ask for B-5422, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21686-A

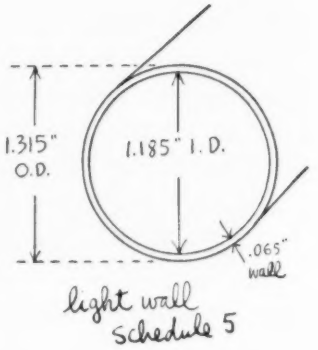
YOU CAN BE SURE...IF IT'S Westinghouse

Why pay for Schedule 40 pipe where Schedule 5 is more than adequate ?

Back in the days when iron pipe was virtually the only kind available, it was necessary to specify this



But today with the high strength/weight ratio of stainless steel, the great majority of pipeline and process applications will have an ample margin of safety with this



All sizes of Carpenter Schedule 5 pipe will easily handle 150 psi working pressures. Sizes under 1½" will safely handle considerably higher pressures.

By specifying this light wall stainless pipe you gain many advantages:

1. You save money. Schedule 5 pipe costs about half as much per foot as Schedule 40.
2. Schedule 5 has the same O.D. as Schedules 10, 40 and 80—for hook-up with existing lines as well as for new installations.
3. Its larger I.D. increases flow and capacity in pipelines, exchangers and other equipment.
4. It's lighter. This means quicker and easier installation.
5. You can save 10% to 25% on valves, fittings, weld rods, etc., because smaller O.D. material can frequently be used.
6. Fittings are available from several manufacturers . . . and stocks of Schedule 5 pipe are carried by conveniently located Carpenter distributors.
7. Tubing sizes can now be replaced with light wall pipe . . . for ready hook-up with standard valves, pumps, etc.

Light wall Schedule 5 pipe saves dollars—and makes a lot of sense!

For complete data on Carpenter Schedule 5 Stainless Pipe, call your nearest Carpenter distributor or write us direct. We'll be glad to send you the information you need. THE CARPENTER STEEL COMPANY, Alloy Tube Division, Union, N. J.

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

THE U.S. NEEDS YOUR STEEL SCRAP NOW

more than corrosion resistance

Carpenter

STAINLESS TUBING & PIPE

Analysis · Tolerance · Finish

- guaranteed on every shipment

Can *YOU* Compete with Nylon Hosiery Finishing *COSTS* and *RESULTS* Like These?

DRYING COSTS CUT 75%
Average labor cost for the drying operation is only 2½c per dozen pairs . . . compared with 12½c by post-boarding methods.
FIRST QUALITY WORK INCREASED 5%-10%
In every installation, first quality work has risen between 5% and 10% . . . and the number of menders has declined proportionately.
APPEARANCE GREATLY IMPROVED
In all installations, appearance of finished hosiery is far superior to post-boarded production, whether by regular or combination preset and post-board method.

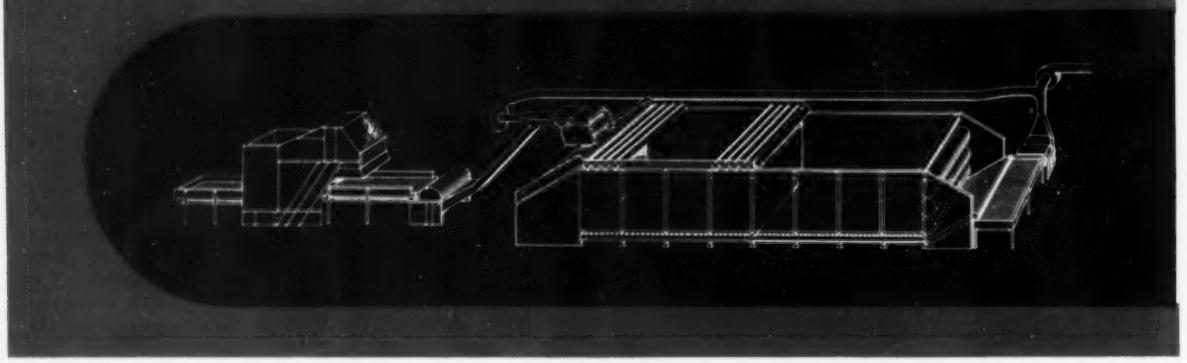
The revolutionary SMITH-DRUM Nylon Hosiery Drying Machine has now been in operation in many of the leading mills for well over 2 years. It is conservatively estimated that *more than ⅓ of the annual production* of ladies' full-fashioned nylon stockings, including many branded lines, are now finished on these SMITH-DRUM machines. With *costs* and *results* like those quoted at the left, affecting such a large portion of total production, it is high time to ask yourself if *you* can expect to compete successfully by continuing to use the slow, costly post-boarding method. We will be glad to give you complete information, at your request.

SMITH, DRUM and COMPANY
432 W. Allegheny Avenue, Philadelphia 33, Pa.

Southern Sales Representatives:
PARROTT & BALLENTINE
South Carolina National Bank Bldg., Greenville, S. C.

 For more information, write direct or use Reader Service post card.

NOW: AUTOMATIC BLENDING WITHIN 1% ACCURACY...*for any size mill with a*



PROCTOR

Mill Engineered SYSTEM

Today it is possible for any textile mill to blend stocks automatically and hold the variance in the blend to less than 1%—through the use of a Proctor mill-engineered system. This accuracy (which never could be achieved by manual blending) means that the last yarn made from a blend is exactly the same as the first.

The exact arrangement—and the type of equipment employed in any system depend entirely upon individual mill requirements.

One typical Proctor system—in operation—is illustrated above. It is built around the Proctor roller distributor. Stocks for blending are deposited on bale breaker feed apron for opening and feeding to picker. From picker, stocks travel to ceiling condenser, which deposits them on inclined apron for feeding to roller distributors. Roller distributors are located over first section of blending bin. When this half of bin is filled, a curtain which divides it from the second section is raised and the floor apron moves stock to second section. Retracting pin rolls discharge stock to cross apron which feeds a second picker. It may then be blown back to ceiling condenser for reblending—or carried directly to the card room.

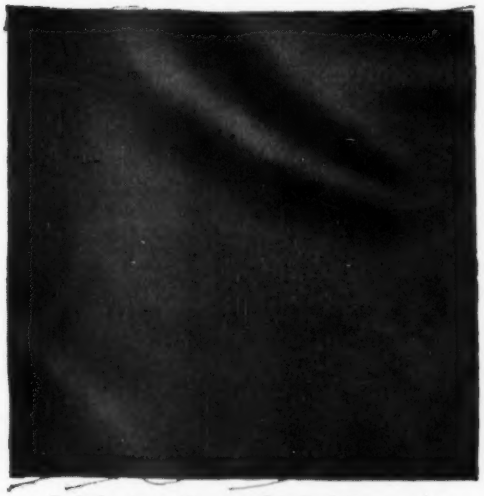
Thousands and thousands of pounds of stock are passing through Proctor systems every day —with the accuracy being reflected in all subsequent operations. When can we discuss your requirements?

PROCTOR & SCHWARTZ · INC · 710 TABOR ROAD · PHILADELPHIA 20 · PA ·

marks the spot

that isn't necessary!

Same construction . . .
sized with STYMER LF



Typical water-spotting on taffeta (top). Same grade of taffeta sized with Stymer LF (bottom).

Loom-finished fabrics resist water-spotting
. . . when sized with new, durable STYMER LF

Do you weave loom-finished fabrics from solution-dyed acetate? Taffetas, for example? Only to find that conventional sizes water-spot?

If so, ask about Stymer LF.

Stymer LF is a new, *durable* size which makes it possible to take *full* advantage of loom-finishing. Taffetas woven from warps sized with Stymer LF *do not* water-spot . . . have a crisp, marketable hand which is also durable to dry-cleaning.

Stymer LF, for sizing, is as efficient as Stymer S, used so widely for conventional acetate sizing . . . but, in Stymer LF, Monsanto offers an entirely new product—a size which gives you all of the opportunities of weaving top-quality fabrics *plus* a lively fabric that does not water-spot.

For your customers' sake, for your own sake, if you work with solution-dyed acetate, you will want to find out more about Stymer LF. Get in touch with MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass. Stymer Reg. U.S. Pat. Off.

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Announcing the new WPF&M HOT AIR SLASHER

HOT AIR DRYING at its best

UP TO 1500 LBS. PER HOUR

REASONABLE INITIAL COST

LOW OPERATING COST

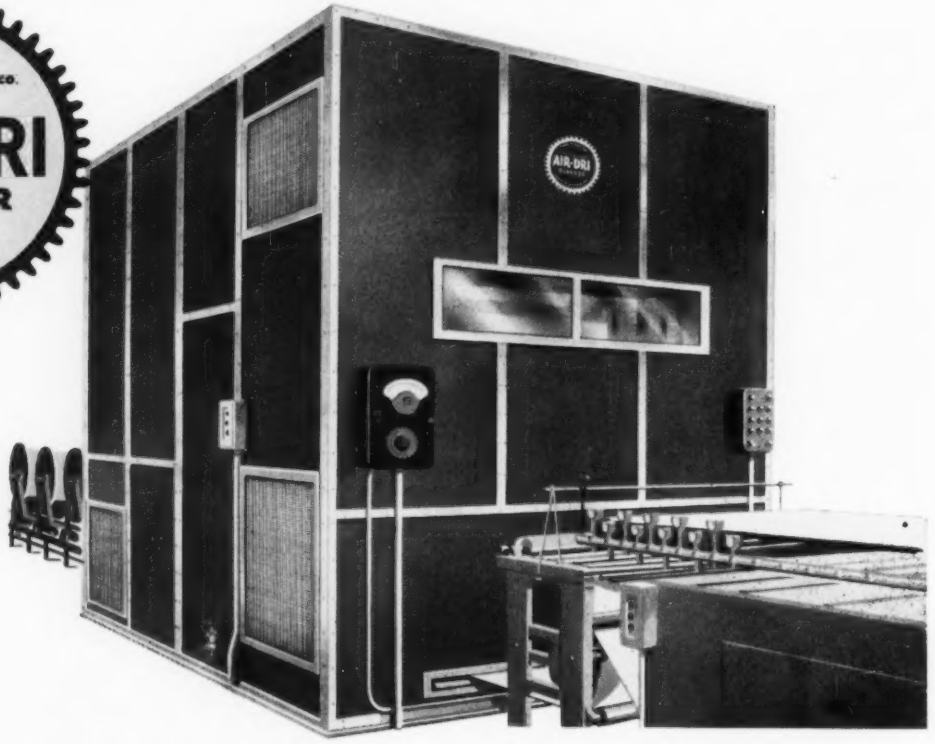
Here's a new high-production hot-air slasher, designed for natural or synthetic fibers, capable of greatly increasing production with little increase in space requirements.

With efficient new Air-Dri Slashers as replacements for out-of-date equipment, you can, in many cases, triple your slasher room output, eliminate overtime and greatly improve warp quality.

Yarn is 40% dry by the time it reaches the first guide roll because a wet splitting device divides the yarn into layers as it enters the dryer.

We will be glad to furnish you with detailed specifications for the advance-design Air-Dri Slasher on request.

WEST POINT FOUNDRY & MACHINE CO.
AIR-DRI SLASHER
WEST POINT, GA., U.S.A.



WPF&M

WEST POINT FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA

WPF&M WARP PREPARATION MACHINERY

Standard 2 and 3 Cylinder Slashers
Cyl-Air Slashers — Air-Dri Slashers
Multi-Can Slashers — Callaway Sample Slasher
WPF&M Hi-Speed 4 Cylinder Slashers

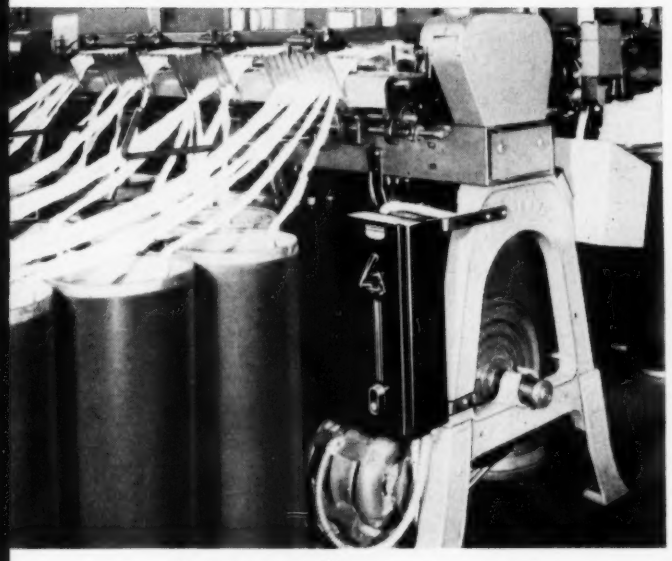
SLASHER MODERNIZATION EQUIPMENT

Hi-Speed Head Ends with Stretch Control
Standard WPF&M Head Ends
Multi-Motor Drives and Controls
Temperature, Speed and Tension Control Devices
Hi-Speed Size Boxes — Model 50 Size Boxes
Standard Size Boxes — Size Kettles and Equipment

For more information, write direct or use Reader Service post card.

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY



for Statesville

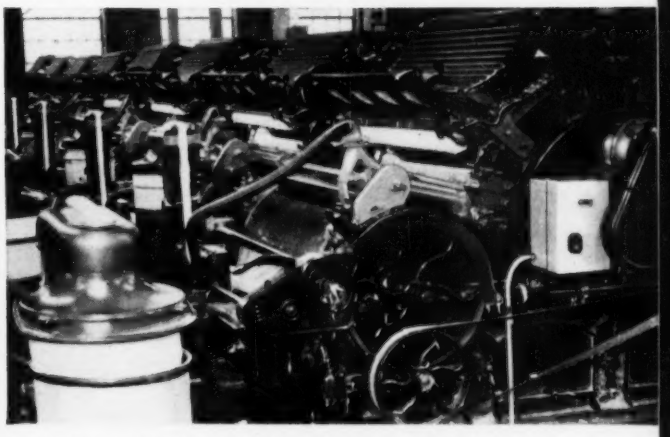
Cutler-Hammer Combination Starters on drawing frames. STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

What this name means

To the men who have had experience with various makes of motor control under the trying conditions and exacting requirements of textile manufacturing, the name Cutler-Hammer means utmost dependability. They have found this dependability far more than a mere competitive claim. They have found it a fact that can stand out in a mill's production records to reflect favorably on their own ability and good judgment in replacing other makes with Cutler-Hammer Motor Control. And they know from experience that Cutler-Hammer dependability is not an occasional happenstance . . . that it is the earned advantage of the longest and most intensive specialization in motor control engineering. They also know Cutler-Hammer can furnish any type of control required, from the simplest starter to the most complex of electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Ave., Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H



for Charles H. Bacon Company

Cutler-Hammer Card Controllers on cards in mill of Charles H. Bacon Company, Lenoir City, Tennessee.

for Springs Cotton Mills

at Kershaw, S. C., plant. Cutler-Hammer Loom Switches for each group of 10 looms are here mounted in single enclosures on adjacent building columns above mill traffic. Note also single combination starter installed ahead of each group.

CUTLER-HAMMER LOOM SWITCH

for fewer shutdowns, greater production, easier maintenance

Pushbuttonoperation—most preferred for this type of starter. Stop button can be padlocked.

Stronger, smaller, drawn steel case. Unique welded-steel mounting pedestal available to create a *complete* assembly with unparalleled resistance to mechanical damage.

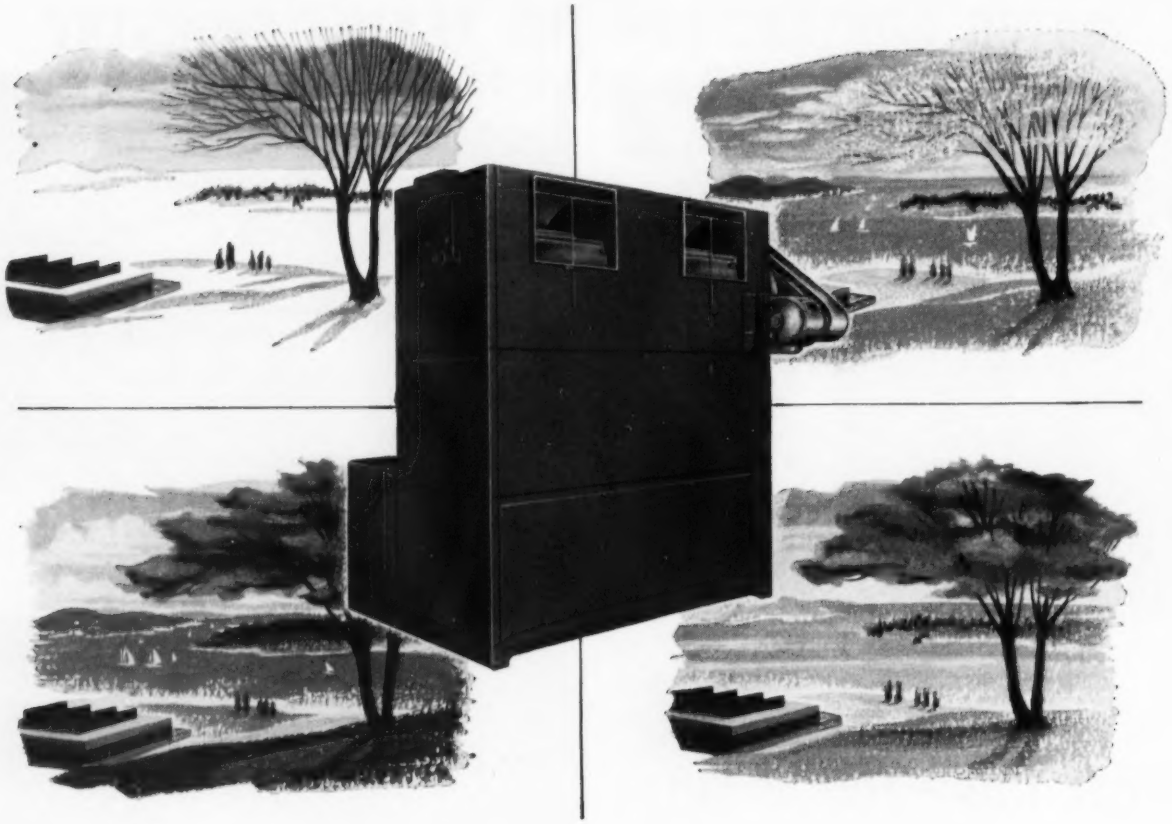
Lint-proof enclosure—close fitting cover (even around pushbutton well) limits entrance of lint and dust.

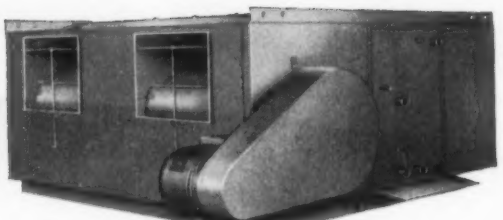
Service proven, positive make, quick break operating mechanism built on *steel* framework.

"Out in the open" contacts for quicker inspection and easy renewal *on the job*. Most dependable overload protection—famous Cutler-Hammer eutectic element type—prevents unnecessary shutdowns without sacrifice of *positive* motor protection.

Vibration resistant. Mechanism "floats" in truly effective *live* rubber mounting bushings.

American Blower Air Conditioning Units





American Blower Type A Conditioner. Capacities from 1000 to 13600 cfm. Either direct expanded refrigerants, chilled water, well water or brine can be used for cooling and steam or hot water for heating.

American Blower Air Conditioning units are designed for summer cooling and dehumidifying and winter heating and humidifying.

This dual function by the same piece of equipment results in substantial savings in cost and offers much in comfort.

Three types are available: the Type A Conditioner for normal unitary type applications, the Type S Conditioner for unitary type application where washed air or high relative humidities are required, the Type M Conditioner for central system installation.

For data, consult the nearest American Blower Branch Office.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN • CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of American Radiator & Standard Sanitary Corporation

AMERICAN BLOWER

YOUR BEST BUY IN AIR HANDLING EQUIPMENT

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS

Bright, colorful tartans for blends of ORLON* and Wool

To get the tartan patterns in these colorful shirtings, Du Pont's technical-service experts went right to the manufacturer's mill and worked with him in developing his dyeing procedure.

Such cooperation enabled him to solve his dyeing problem by drawing on past experiences with similar fiber blends.

Call on Du Pont whenever you have a dyeing problem with any wool-synthetic blend. Our technical-service representatives will draw on Du Pont's unique experience as both a producer of dyes and creator of man-made fibers.

Du Pont's research is directed constantly toward improving dyes and dyeing methods. In the field of dyeing man-made fibers, many new developments are occurring. Keep in touch with us for the latest information. E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

**ORLON is Du Pont's trade-mark for its acrylic fiber.*

Du Pont Dyes

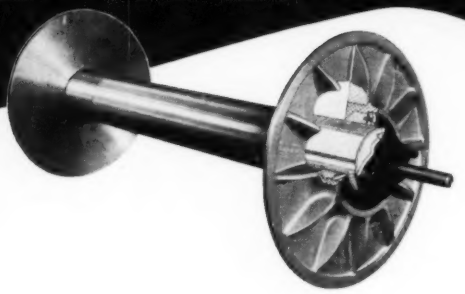
DU PONT

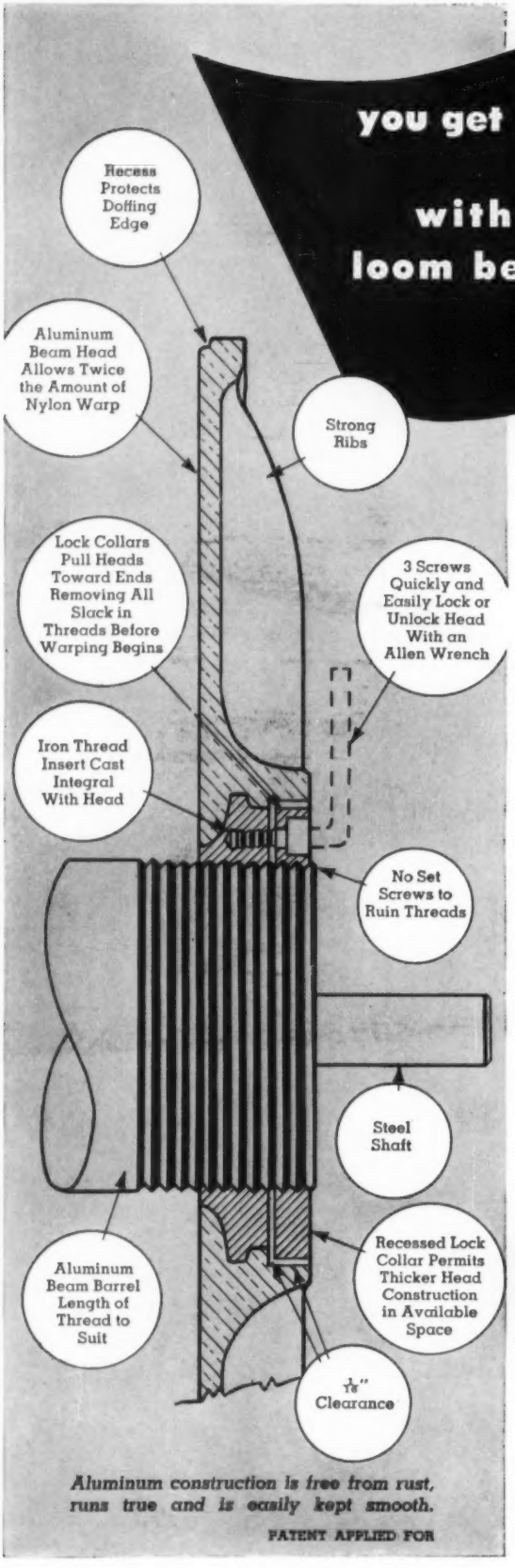
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

you get { 1. Quick, easy adjustment
2. Greater head strength
3. The utmost simplicity

with *HAYES* adjustable loom beam head locking device




Recess Protects Doffing Edge
Aluminum Beam Head Allows Twice the Amount of Nylon Warp
Strong Ribs
Lock Collars Pull Heads Toward Ends Removing All Slack in Threads Before Warping Begins
3 Screws Quickly and Easily Lock or Unlock Head With an Allen Wrench
Iron Thread Insert Cast Integral With Head
No Set Screws to Ruin Threads
Steel Shaft
Aluminum Beam Barrel Length of Thread to Suit
Recessed Lock Collar Permits Thicker Head Construction in Available Space
1/16" Clearance

Aluminum construction is free from rust, runs true and is easily kept smooth.

PATENT APPLIED FOR

The new Hayes adjustable beam head locking device (pat. applied for) is a marvel of **practical** simplicity. Three screws easily and quickly lock or unlock the head with an ordinary Allen wrench. No special tools are required and in addition to its simplified design the new Hayes locking device is strong and sturdy in construction and stays put once properly locked in place.

Hayes long experience in machining and manufacturing light weight metal beams has resulted in a light weight, adjustable loom beam that gives you greater head strength, increased rigidity and a permanent running balance that stays true indefinitely. The glass-smooth surfaces of course, do not rust, and require no painting or maintenance expense. Hayes produces adjustable loom beams for all standard looms. Write today for complete information on Hayes Beams.

The World's Largest Producer of Light Metal Beams

HAYES
INDUSTRIES, INC.
Home Office: Jackson, Michigan

EASTERN REPRESENTATIVE:
J. Paul Laird
Philadelphia, Pennsylvania

SOUTHERN REPRESENTATIVE:
R. E. L. Holt Jr. & Associates
Greensboro, No. Carolina

NEW ENGLAND REPRESENTATIVE:
J. S. Fallow & Co.
New Bedford, Mass.

CANADIAN REPRESENTATIVE:
J. S. Fallow & Co.
Montreal, Canada

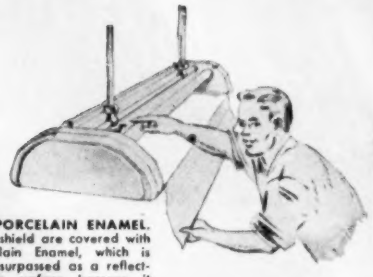
now, a new high in seeing comfort

through sensationally-increased UPWARD LIGHT...

Now, approximately ¼ of light is directed UPWARD through a completely new, precedent-shattering concept of lighting unit design! The new Benjamin "Task-Master" is the modern solution to the brightness ratio problem. By combining greater upward flow of light with a new high of 35° in lamp shielding, "Task-Master" doubles, even triples, present standards for industrial seeing comfort. In addition to sensationally-increased UPWARD light and lamp shielding, "Task-Master" features revolutionary new, easier methods of installation and maintenance, such as those illustrated below. Send for FREE "Task-Master" Bulletin, giving further details. Write for Bulletin AD 5906. Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Illinois.

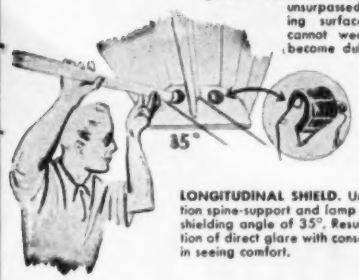
BENJAMIN "Task Master"

Sold Exclusively through Electrical Distributors



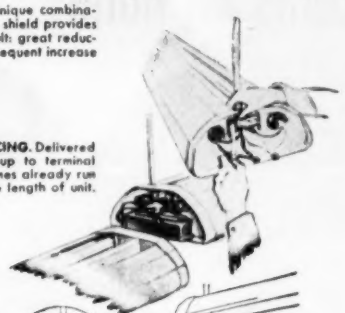
DETACHABLE REFLECTORS are hinged to make possible easier, more thorough cleaning right on the fixture. They may also be detached and cleaned away from the unit. Available with sliding hangers, as shown.

"LIFE-TIME" PORCELAIN ENAMEL. Reflectors and shield are covered with genuine Porcelain Enamel, which is unsurpassed as a reflecting surface because it cannot wear, scratch or become dull.



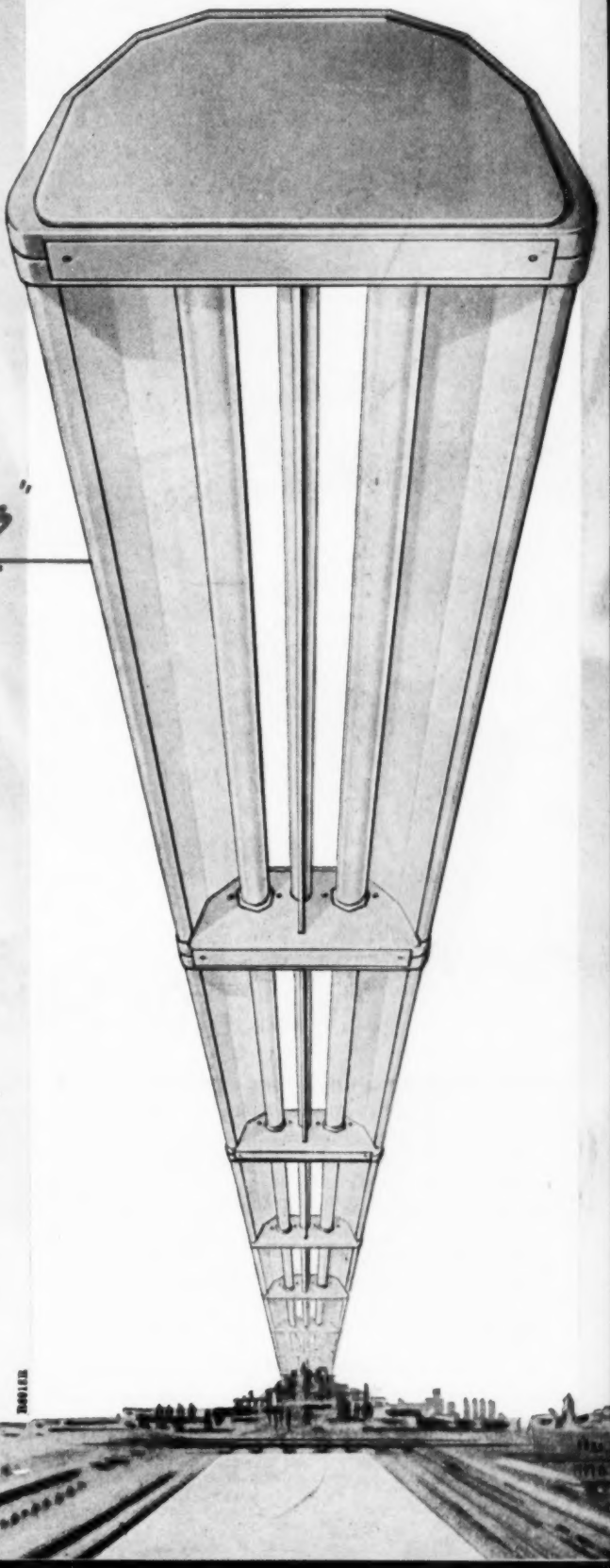
"SPRINGLOX" LAMPHOLDERS are standard equipment. These rugged, all-metal, lifetime lampholders facilitate lamping and relamping through patented spring design.

LONGITUDINAL SHIELD. Unique combination spine-support and lamp shield provides shielding angle of 35°. Result: great reduction of direct glare with consequent increase in seeing comfort.



PRE-WIRED—NO WIRE SPLICING. Delivered with all connections made up to terminal block. Branch-circuit wire comes already run through spine support, entire length of unit.

SPECIAL "HOOK-UP" DESIGN makes it possible for the installer to temporarily hang one unit on another while connecting the jumper wires to opposite terminal blocks.



...with TYCOL lubricants on hand!

Take textile machinery, for example. There's a Tycol lubricant for any application you name: For instance, what about high speed spindles? . . . Tycol Alweave oils reduce thread breakage, hold spindle drag and bolster losses to a minimum. Loom gears? . . . Tycol Amortac oils have the necessary "stringiness" to keep them from dripping from exposed gears. Top rolls? . . . Use Tycol Akup or Ambrokup grease. You always get top performance with Tycol lubricants. Why? . . . Because each Tycol grease and oil is manufactured from high quality base stocks and *tailored* for a specific application. Get the full story of the entire Tycol line from your local Tide Water Associated office today!

Over 300 Tycol industrial lubricants are at your disposal . . . engineered to fit the job!

REFINERS AND MARKETERS OF VEEDOL . . . THE WORLD'S MOST FAMOUS MOTOR OIL

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C. • Pittsburgh
Philadelphia • Chicago • Detroit
Tulsa • Cleveland • San Francisco
Toronto, Canada

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

For more information, write direct or use Reader Service post card.

WORM GEARING—universal in its application—affords advantages for almost every power transmission job. Whether you want worm gearing sets or speed reducer units, you will find drives to meet your need in the complete Cleveland line.

Vickers Inc. hydraulic winch in operation on a Piasecki Hup-1 helicopter. Inset at left shows built-in Cleveland worm gearing.

Small Cleveland gearing speeds sea rescue

CLEVELAND worm gearing now has a part in a new kind of sea rescue. Just after the war, for the first time, a Vickers hydraulically-operated winch mounted on a helicopter hoisted two men to safety when an oil barge ran aground. Now use of the winch is standard practice, replacing hard-to-climb rope ladders previously used.

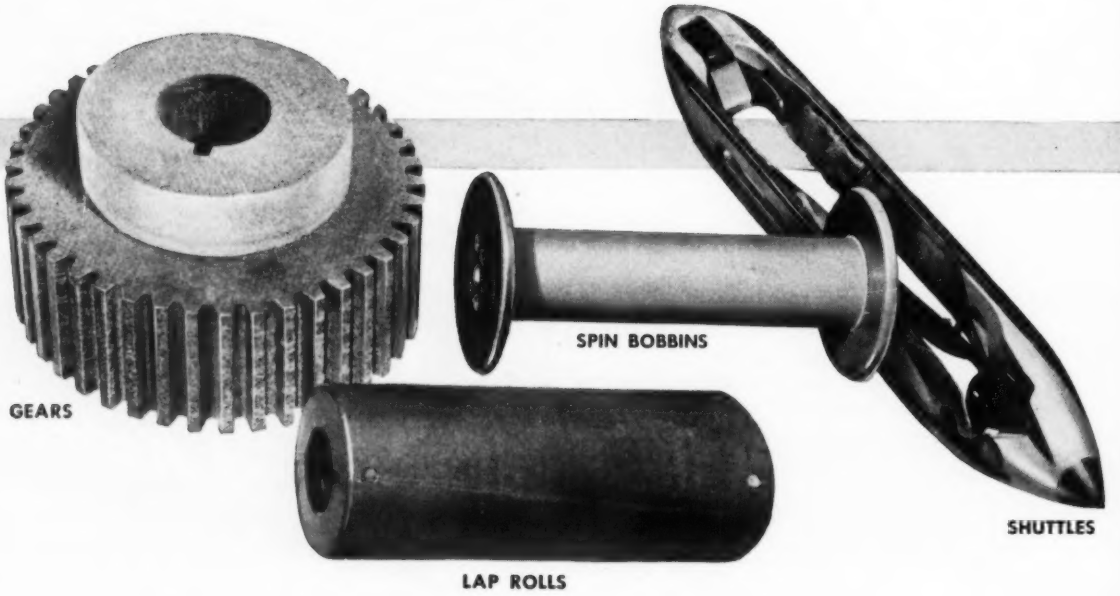
Vickers Inc. chose Cleveland worm gearing to drive the winch because it is small enough and light enough to satisfy rigid weight and bulk restrictions and is capable of governing efficiently sudden stops and starts and changes of direction involved in rescue work. To date Cleveland worm gearing has participated in over 1700 Korean missions.

Cleveland manufactures worm gearing and worm gear speed reducers in a wide range of types and sizes, large and small, to meet the requirements of any machinery builder or user. Write today for Catalog 400. The Cleveland Worm and Gear Company, 3268 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers, Limited.

 For more information, write direct or use Reader Service post card.

here's why... MORE and MORE mills are turning to micarta®...



because of these qualities . . .

Saves Weight, weighs half as much as aluminum.
Resists Compression, pound for pound greater than steel.
Resists Impact, absorbs and withstands severe shock.
Withstands Vibration, cushions repeated shock without effect.
Insulates like mica but greater flexibility.
Resists Corrosion, not affected by acids, oils, fumes.
Resists Heat and Cold from –112°F to 212°F.
Resists Moisture, in fact, water is its best lubricant.
Wears Slowly, Evenly, in many cases more slowly than metal.
Reduces Noise, absorbs vibrations, deadens noise.
Fabricates Easily, machined or punched with ordinary tools.

because of these flexibilities . . .

Laminated MICARTA includes standard structural shapes: plates, sheets, angles, channels, rods, tubes and zees. Occasionally this class includes simple molded shapes.

Molded MICARTA is the choice for complicated shapes, large production quantities of either simple or complicated shapes, or for certain properties better obtainable in form molding.

because MICARTA is basic

MICARTA is a tough and resilient basic material that welcomes comparison with other basic materials. This versatile plastic outlasts wood and metal in many punishing applications. Investigate MICARTA and you'll find it the economical solution to tough production problems.

for more information on how MICARTA can help solve your production problems, and give you advantages no metal can give you, please fill out the coupon below. A MICARTA representative will then call on you personally.

mail it today!

YOU CAN BE SURE... IF IT'S
Westinghouse
micarta

Westinghouse Electric Corporation
MICARTA Division, Trafford, Pa.
Attention: L. A. Pedley

Sir: (Please Check One)

☐ Please have your representative call
☐ Please send me the complete facts on MICARTA

Name _____ Company _____
Address _____
City _____ Zone _____ State _____

J-06501-A

Rayon...Acetate...Nylon...Orlon...Dacron

HONEYWELL now extends the scope of the *Moist-O-Graph* principle . . . making a single instrument capable of measuring percent moisture in *any* warp, simply by turning a switch.

used by leading mills

For mills which process varied types of fibres using different sizing materials, this advancement means that the full advantages of complete slasher control are always realized. The method has been thoroughly tested in both laboratory and mill. It is working today on acetate, viscose and nylon yarn, spun yarn, and worsted and rayon blend—sized with gelatin, starch, Stymer or Orthocryl. Among the leading mills which use *Moist-O-Graph* are:

Pansy Weaving Company — Textron
Stehli and Company — Beaunit Mills
Green Halgh Mills — Canadian Celanese
Chicopee Manufacturing Company

reads regain directly

Today's *Moist-O-Graph* incorporates features which Honeywell has developed following more than 15 years of pioneering experience in this field. Notable among these features are the instrument's direct reading scale and chart . . . the slasher operator doesn't have to interpret, consult tables. He sees on the instrument an indicated and recorded measurement that immediately tells him actual percent regain. And this calibration is made *at the factory* . . . does not require field adjustment. The measuring instrument is an *ElectroniK* recorder, famous throughout industry for accuracy and dependability.

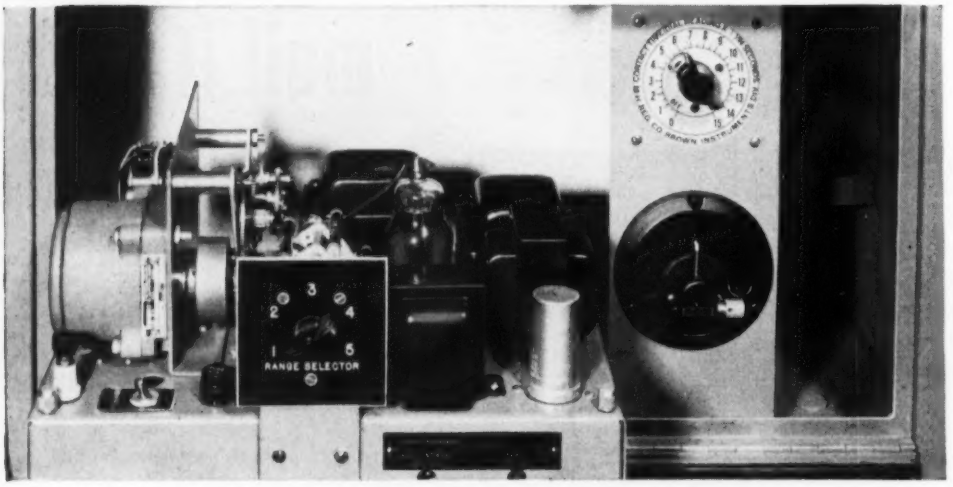
multiple range

When there's a change in the fibre fed to the slasher, or in the size used, all the operator has to do is turn a selector switch to the proper range. The calibration then applies to the new operating conditions. The only other adjustment that the operator has to make is to set the index at the desired regain.

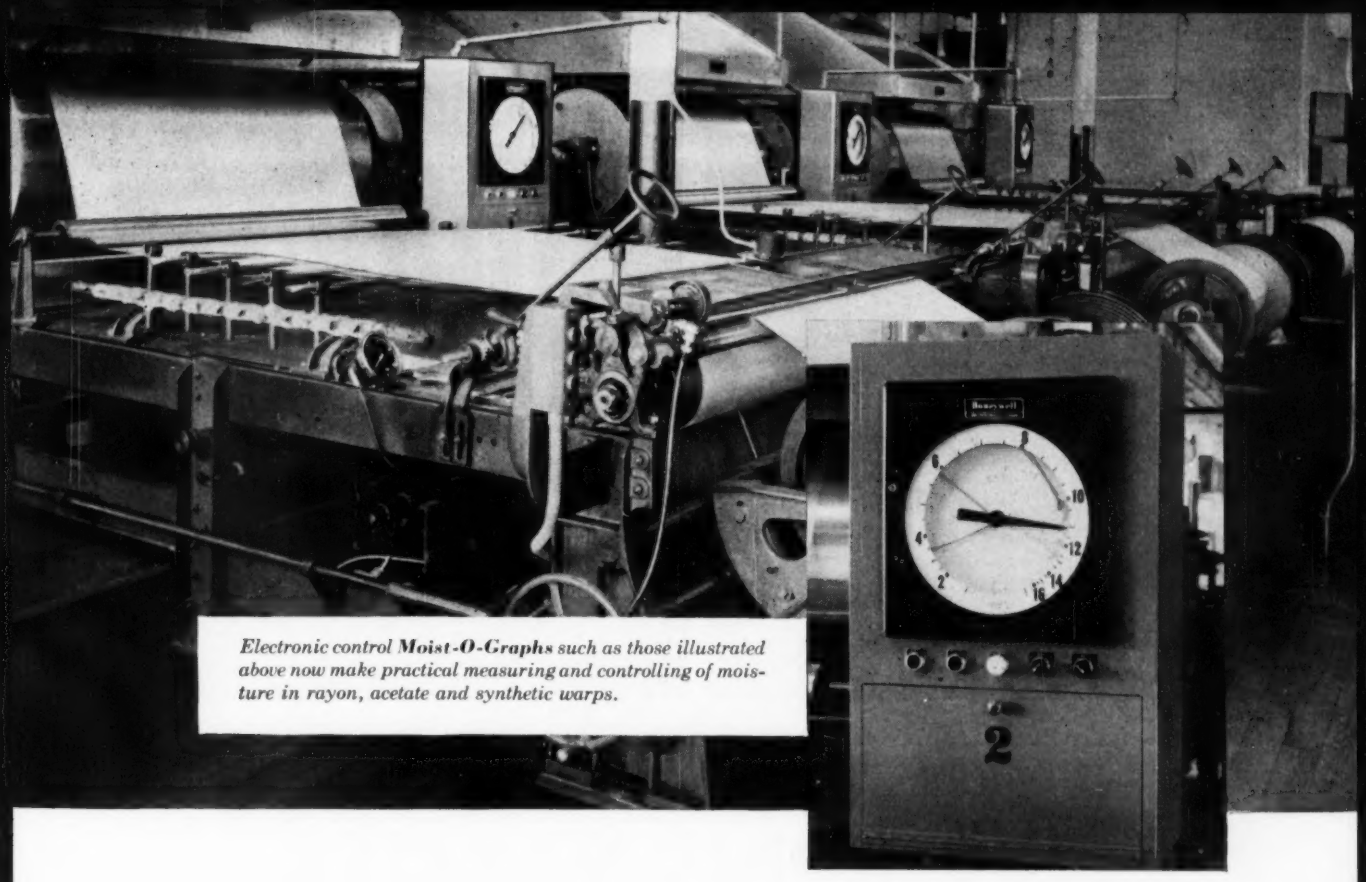
part of complete slasher system

For automatic control of regain, the *Moist-O-Graph* regulates slasher speed to maintain the correct drying rate. The result is that the slasher operates at the maximum speed possible for a given warp. This control is integrated with other Honeywell instruments, which are combined into complete systems for efficient, centralized regulation of the entire slashing process.

Moist-O-Graph®—
of rayon,



A turn of this switch changes the ***Moist-O-Graph*** *calibration to read percent regain directly, for any fibre, blend and/or size.*



Electronic control ***Moist-O-Graphs*** *such as those illustrated above now make practical measuring and controlling of moisture in rayon, acetate and synthetic warps.*

for controlled regain acetate and synthetic yarns

REGARDLESS of the fibre you're processing, you can measure and control warp moisture directly by means of the versatile, electronic multi-range *Moist-O-Graph*.

In leading mills, such as those listed on the opposite page, this instrument is making possible better weaving through more uniform warp, by controlling at uniform moisture . . . providing correct moisture . . . preventing wet warp . . . eliminating overdrying . . . and assuring uniform stretch.

Added to this benefit of better weaving is the attendant increase in slasher room production, made possible by the fact that the *Moist-O-Graph*:

- *prevents overdrying of yarn, resulting in fewer stoppages*
- *makes possible higher running speed*
- *provides operation records*

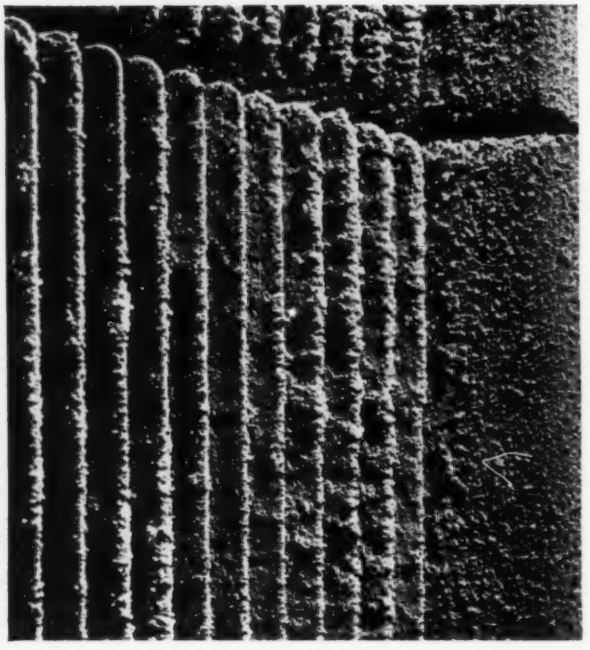
Our local Honeywell engineering representative will be glad to give you full details on how this instrument can help improve slasher efficiency in your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa. Sales and service offices in more than 110 principal cities of the United States.

● **REFERENCE DATA: Write for new Bulletin No. 54-66.**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

Before—PRECIPITRON® cells in close-up show clean aluminum collector plates. This is the way they appear after periodic washings, which dispose of all trapped airborne particles.



After only 2½ weeks cleaning "normal atmospheric" air, the same plates had accumulated this much dirt. PRECIPITRON stops airborne dirt, pollen, mists—even germs and smoke!

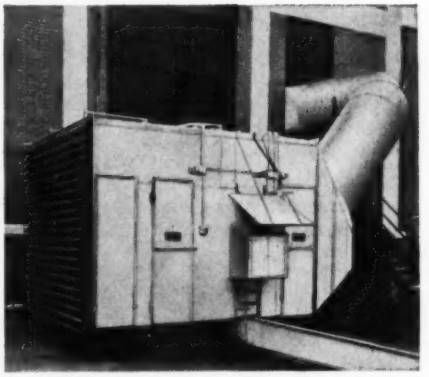
ELECTRONIC BARRIER

AGAINST INVISIBLE DIRT

Contamination by bacteria-carrying particles is costly in laboratories and food processing plants. In textile mills, airborne specks streak the yarns, change premium-commanding light shades into dark. In your processes, buildings, offices—even your own home—"invisible" dirt costs you money.

But PRECIPITRON—the electronic air cleaner—will take *all* the dirt out of the air. It removes particles so tiny they can be seen only with an Ultra Microscope. The savings in controlling airborne dirt with PRECIPITRON are worth looking into today.

To help you *put air to work*—with air cleaning, air conditioning or air handling—Westinghouse offers a complete equipment line. For a free copy of General Catalog 600, call your local Westinghouse-Sturtevant Office. Or, write to Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.



Cleaning efficiency of PRECIPITRON is 90% or better at 333 fpm. Dirt is held on the plates until washed down. A garden-type hose flushes it directly into the drain—quickly, easily, inexpensively.

YOU CAN BE SURE...IF IT'S **Westinghouse**

AIR CLEANING

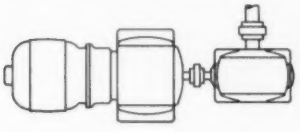
J-80227B

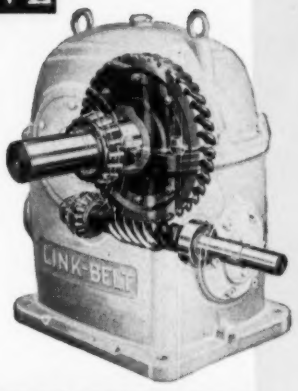
For more information, write direct or use Reader Service post card.

How to change even complex speed reduction problems into *simple* ones

WORM GEAR DRIVE

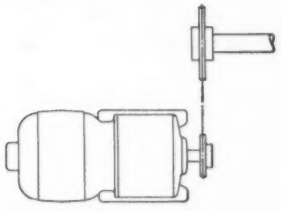
WORM GEAR and P.I.V. variable speed drives are shown direct-coupled. Link-Belt worm gear drives are available in 3.1:1 to 8000:1 reduction ratios—1400 to 123,000 in. lbs. torque—0.22 to 564 output shaft rpm. Ask for Book 2324A.





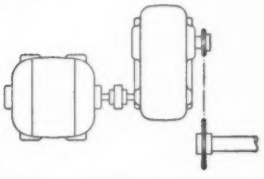
GEARMOTOR & HELICAL GEAR DRIVE

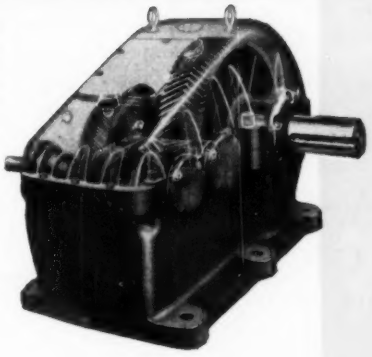
GEARMOTOR is shown with roller chain drive. Link-Belt Helical Gear Drives, Gearmotors and Motogears are available in 6.2:1 to 292:1 reduction ratios—1 to 30 hp—6 to 280 output shaft rpm. Ask for Books 2247 and 2451.



HERRINGBONE GEAR DRIVE

HERRINGBONE GEAR DRIVE is shown connected by flexible coupling to motor and with roller chain take-off. Link-Belt Herringbone Gear Drives are available in 2.84:1 to 326:1 ratios—0.4 to 2480 hp—2.2 to 623 output shaft rpm. Ask for Book 2519.





Get the proper drive combination that best meets your requirements from the broad LINK-BELT line

In addition to matching a wide range of requirements for ratio, hp, loading conditions and similar factors—Link-Belt enclosed gear drives offer you other benefits. When your Link-Belt representative selects a helical, herringbone or worm gear drive, you have no worries about coordinating it with your other components.

For Link-Belt builds a complete power transmission line. There's no need to exchange drawings with a third person to calculate chain, sprocket, coupling, bearing or even shafting requirements. You can get all these from one source . . . each pre-engineered for perfect fit.

Next time you're faced with a speed reduction problem, take it to power transmission headquarters. There's a Link-Belt sales office or distributor near you. Call today for complete engineering information.

LINK-BELT

ENCLOSED GEAR DRIVES

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

13,128

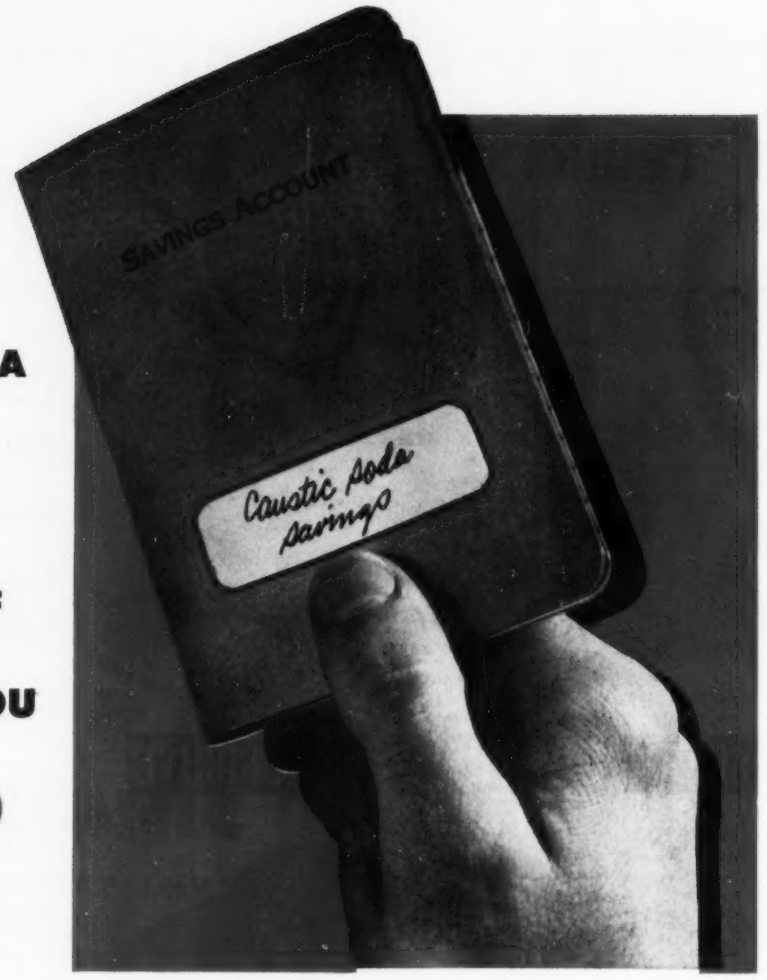
 For more information, write direct or use Reader Service post card.

IF YOU ARE A USER OF 50% CAUSTIC SODA

WOULD YOU INVEST $2,120 IF IT COULD SAVE YOU

$20,979

IN FIVE YEARS?



THIS CUSTOMER DID BY SIMPLY SWITCHING TO 73% CONCENTRATION

This is an actual case of a bleach manufacturer located in the south. It is by no means an exceptional experience. Naturally, the volume of caustic soda consumed determines the savings realized in switching from 50% to 73% concentration.

In 1952, this bleach manufacturer purchased 630 anhydrous tons of Columbia-Southern 73% caustic which cost $45,246.60 delivered.

If this customer had continued to buy the 50% liquor, it would have cost $49,442.40. A savings of $4,195.80 was realized the first year. In five years this amounts to $20,979.00. And of course the savings do not stop at the end of five years; they go on and on.

The total cost of equipment and installation necessary to effect these savings ran $2,120. We believe it will pay you as it did this customer to seriously investigate switching from 50% to 73%.

The unloading method used with 73% is a compact unit that combines unloading and diluting in a single operation.

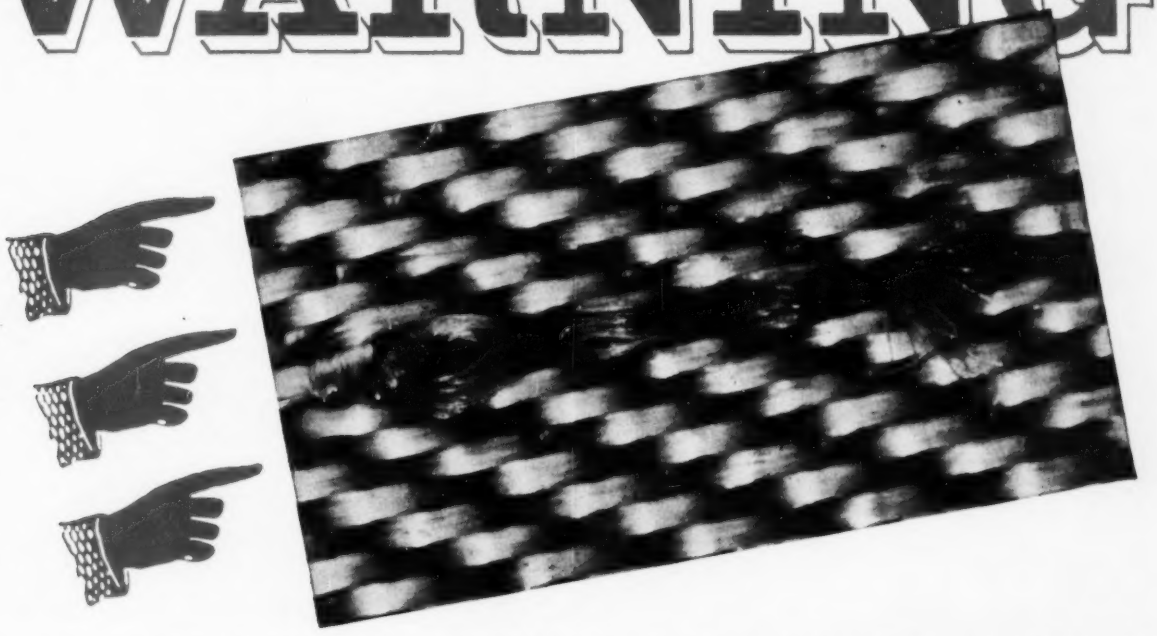
Columbia-Southern's technical staff will be glad to make recommendations regarding the cost and location of this unit. Also, they will help you with the unloading of the initial shipment.

Write our Pittsburgh office to determine if your plant location offers you this opportunity for potential savings.

COLUMBIA-SOUTHERN
CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

EXECUTIVE OFFICES: FIFTH AVENUE AT BELLEFIELD, PITTSBURGH 13, PA. **DISTRICT OFFICES:** BOSTON • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND DALLAS • HOUSTON • MINNEAPOLIS • NEW ORLEANS • NEW YORK • PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO

WARNING



THIS DANGEROUS BANDIT CAUSES SECONDS ...STEALS PROFITS

A speck of grime on an operator's finger as he ties a broken end...or dirt picked up by any knot during processing, makes the dirty knot an ugly criminal that produces profit-stealing seconds.

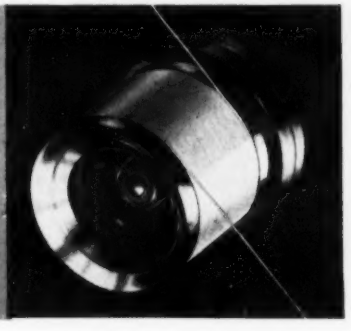
I.R.C.'s revolutionary Continuous Spinning Process cleans up this crime wave of dirty knots in rayon fabric by delivering virtually knot-free yarn. This is possible because it is spun, bleached, dried, treated and twisted in one continuous sequence of operations, without once being touched by human hands.

Weavers all over the world look to Continuous Spinning for the rayon yarn that makes better fabric with fewer defects...keeps production up—costs down.

IRC

Industrial Rayon Corporation

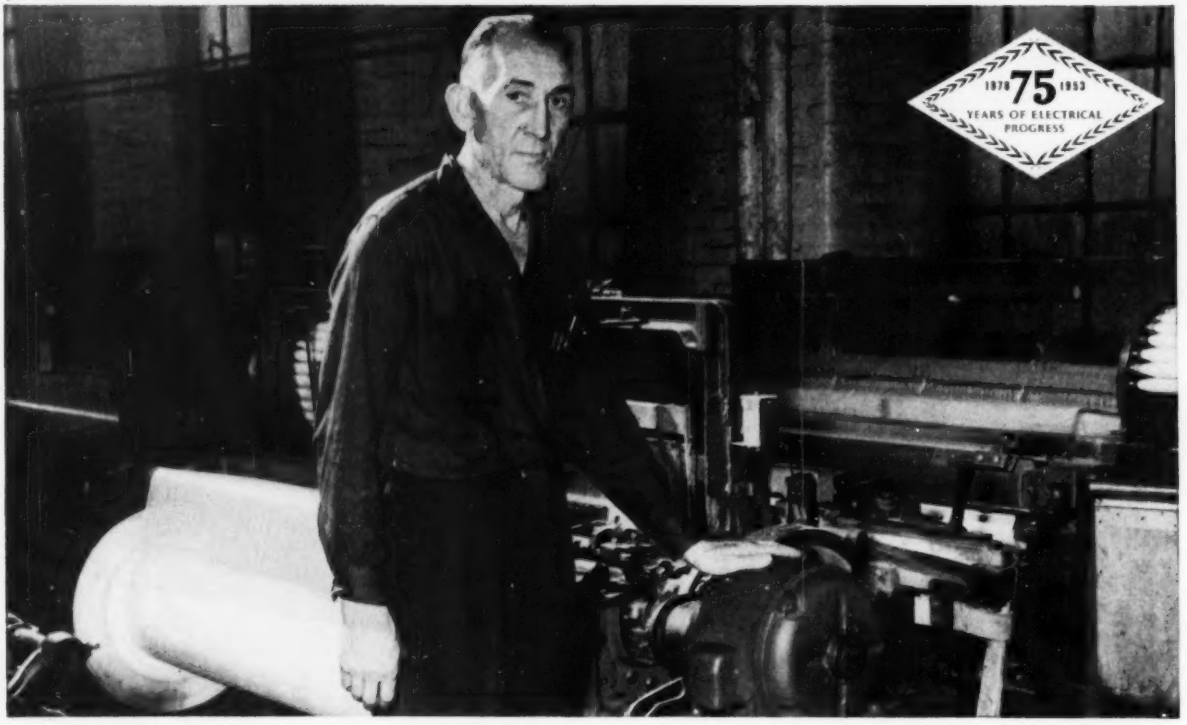
Cleveland, Ohio



I.R.C.'s "Thread-Advancing" Reel...your guardian against flaws in rayon yarn.

Sales Office
500 Fifth Avenue,
New York 36, N. Y.

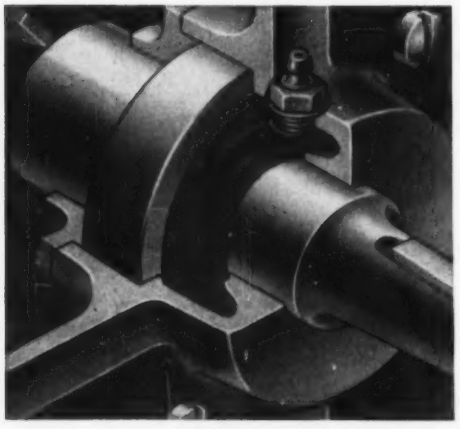
For more information, write direct or use Reader Service post card.



"Our G-E ball-bearing loom motors . . .

. . . mean less downtime, easy service"

says Webb R. Cashion, master mechanic, Cone Mills Corporation, Greenville, S. C.



BOTH SIDES OF BEARING are surrounded with large grease reservoirs to assure more continuous operation under tough, pulsating loom loads.

"Because G-E ball-bearing loom motors are easy to re-grease, we've been able to set up a smooth-running service schedule," says Master Mechanic Webb R. Cashion of the Cone Mills Corporation, Florence Division, American Spinning Plant at Greenville, S. C.

"We don't need to tear down these motors for re-greasing. All we do is take out the drain plugs and give the bearings two or three quick shots with a grease gun."

G-E ball-bearing loom motors stand up under the rigid speed and torque requirements of today's looms. Rugged cast-iron stator frames and end shields, and totally-enclosed stator construction simplify installation and upkeep. Careful electrical design adds extra life and reliability. For more information, contact your G-E Apparatus Sales representative or write for Bulletin GEA-5858. General Electric Co., Schenectady 5, N. Y. 654-27

Years of service—
then *easy* relubrication!

Bearing lubrication is no problem here. Grease reservoirs contain more than four times as much grease as in conventional sealed bearing construction. Bearing housing holds grease in constant contact with bearings. Eventually, lubrication will be necessary to length bearing life. You do it with a grease gun—without removing the end shields!

You can put your confidence in—

GENERAL ELECTRIC

ANNOUNCING
THE NEW
LUNKENHEIMER
VALVE
HANDWHEEL

"non-slip"*
for positive closing

This revolutionary "Non-Slip" Handwheel introduces another Lunkenheimer improvement! Four rounded, non-slip lugs are gripped comfortably and firmly —operator's hand can't slip, even when wet or greasy. Result: Ordinary hand leverage closes the valve tight.

The new "Non-Slip" Handwheel is cooler, too—and keeps the operator's hand away from the top of the stem, which may be hot. It's sturdier, easier to operate, and makes your valves last longer.

*Patent Pending

WRITE FOR the name of your nearest Lunkenheimer distributor. He can show you samples of Lunkenheimer Valves with the new "Non-Slip" Handwheel. See them for yourself — *test them*. The Lunkenheimer Company, Box 360R, Cincinnati 14, Ohio.

BRONZE • IRON • STEEL

LUNKENHEIMER

THE ONE *Great* NAME IN VALVES

L-152-23

Richards-Wilcox "Zig-Zag" Continuous Power Conveyor can save you *Thousands of dollars Yearly!*

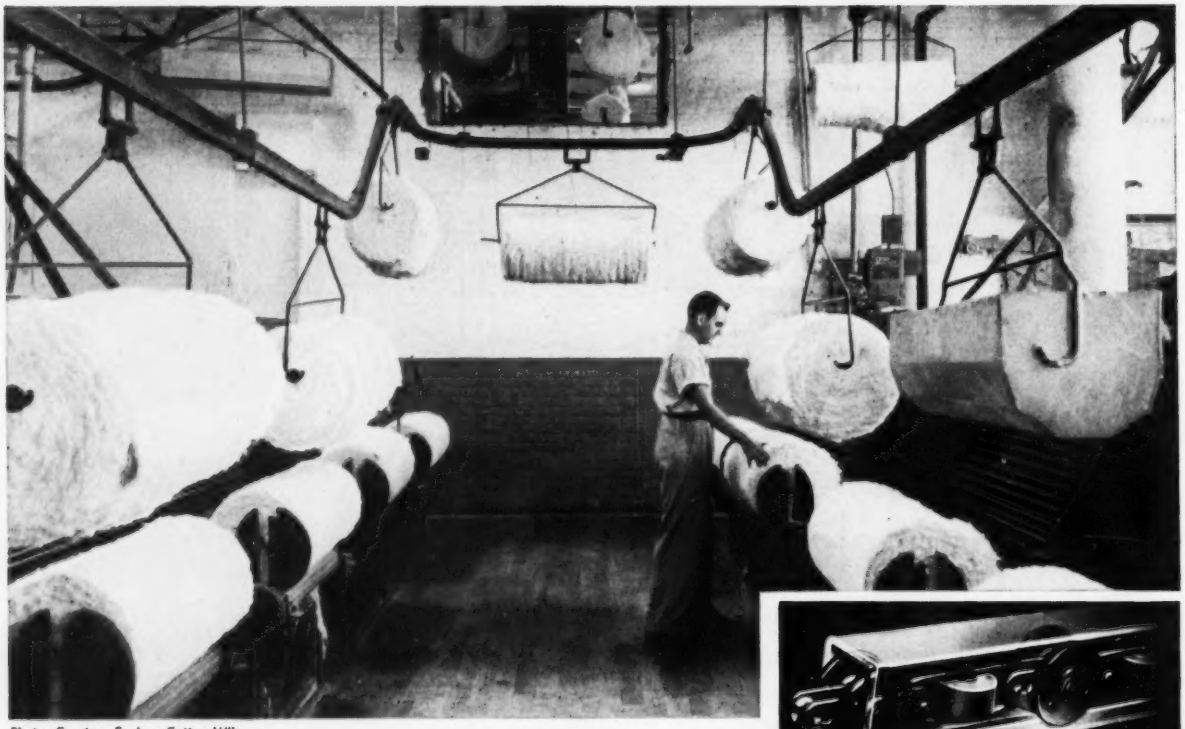
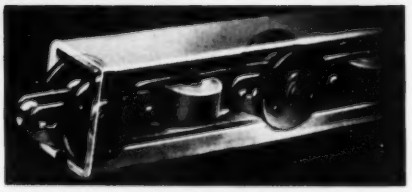
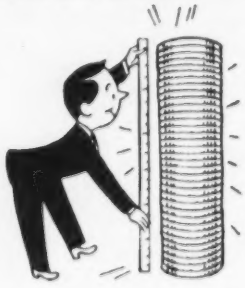


Photo: Courtesy Springs Cotton Mills





Yes, it's a proved fact that R-W Zig-Zag Continuous Power Conveyors can help save thousands of dollars in operating costs, and help raise production to boot. Patented ZIG-ZAG operates just like "water through a pipe"—it's a steel tube-like track through which travels a specially constructed motor-driven chain carrying unit loads up to 125 pounds each.

Zig-Zag solves handling problems in crowded or confined areas—increases efficiency and adds economy to any production line.

Engineered for economy and flexibility, here's what Zig-Zag has to offer you—

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- SAFE—all moving parts fully enclosed.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- Low first costs. Low Power Factor.
- Standard horizontal or vertical curves—two-foot radius.

For complete information consult, without obligation, our engineers at the Richards-Wilcox office nearest you.

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A. *Branches in all principal cities*

SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT
INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

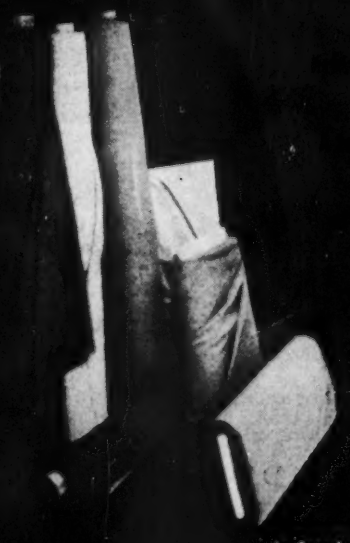
1880 RICHARDS WILCOX R-W AURORA 1953

Reg. U. S. Pat. Off.

OVER 73 YEARS

for softer resin-treated fabrics

XYNO FINISH 9909



ONYX

OIL & CHEMICAL COMPANY

TEXTILE DIVISION

WARREN & MORRIS STS., JERSEY CITY 2, N. J.

CHICAGO · BOSTON · CHARLOTTE · ATLANTA

In Canada: ONYX Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. For Export: ONYX International, Jersey City 2, N. J.

Richards-Wilcox "Zig-Zag" Continuous Power Conveyor can save you *Thousands of dollars Yearly!*

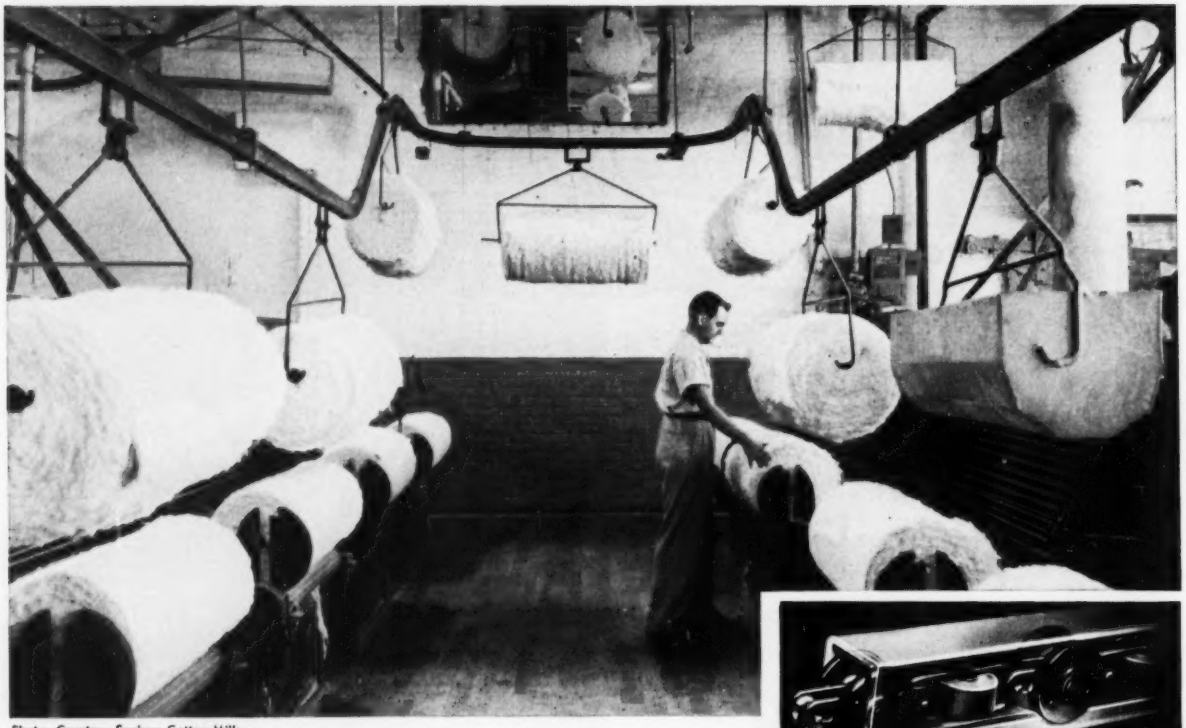
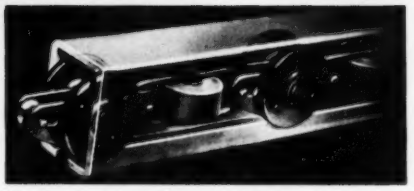
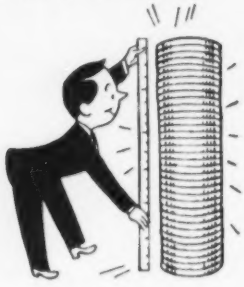


Photo: Courtesy Springs Cotton Mills





Yes, it's a proved fact that R-W Zig-Zag Continuous Power Conveyors can help save thousands of dollars in operating costs, and help raise production to boot. Patented ZIG-ZAG operates just like "water through a pipe"—it's a steel tube-like track through which travels a specially constructed motor-driven chain carrying unit loads up to 125 pounds each.

Zig-Zag solves handling problems in crowded or confined areas—increases efficiency and adds economy to any production line.

Engineered for economy and flexibility, here's what Zig-Zag has to offer you—

- Horizontal and vertical units alternate in a continuous chain traveling through special steel tubing.
- SAFE—all moving parts fully enclosed.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- Low first costs. Low Power Factor.
- Standard horizontal or vertical curves—two-foot radius.

For complete information consult, without obligation, our engineers at the Richards-Wilcox office nearest you.

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A. *Branches in all principal cities*

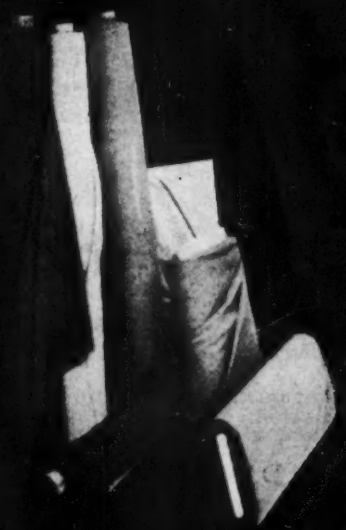
SLIDING DOOR HANGERS & TRACK • FIRE DOORS & FIXTURES • GARAGE DOORS & EQUIPMENT
INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

1880 RICHARDS WILCOX R-W AURORA TRADE MARK Reg. U. S. Pat. Off. 1953

OVER 73 YEARS

for **softer** *resin-treated fabrics*

XYNO FINISH 9909



ONYX

OIL & CHEMICAL COMPANY

TEXTILE DIVISION

WARREN & MORRIS STS., JERSEY CITY 2, N. J.

CHICAGO • BOSTON • CHARLOTTE • ATLANTA

In Canada: ONYX Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. For Export: ONYX International, Jersey City 2, N. J.

He's a great Bowler — BUT

How does he compare with Hank Marino?

Hank Marino, elected "Bowler of the First Half Century" by the Bowling Writers of America was former National Individual Match Game Champion. He has bowled eleven 300 games in league play. He retired undefeated in Match play.

In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard of comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. Simple and flexible in operation. 51-gauge, 60-gauge, 66-gauge.

TEXTILE MACHINE WORKS • READING, PENNA.

PROSPERITY IN THE USA: How Deeply in Debt Are We?

How prosperous *are* the people of the United States? Previous messages in this special series have answered this question in part by recording the progress—relatively slow progress—we have made in increasing both the income and the wealth per person in the USA.

This fourth and concluding piece of the special series deals with the extent to which our prosperity should be discounted because it has been accompanied by an increasing volume of debt. Many correspondents have suggested to us that an individual or a nation can temporarily increase prosperity by borrowing, but in so doing lives on both borrowed goods and borrowed time. Our purpose here is solely to throw light on the question of whether or not we are now in that unenviable position.

On January 1, 1953, the total debt of the United States government and of its citizens was $627 billion, as shown in the table below. On its face, a debt of this magnitude, which represents about $3,900 of debt for each person, suggests that we are heavily debt-ridden.

TOTAL DEBT – PUBLIC AND PRIVATE

Federal government debt	$267 billion
State and local debt	30 "
Private debt	
Corporations	195 "
Individuals	135 "
	$627 billion

The burden of our debts, however, does not depend simply on their size. It depends in much more decisive degree on our capacity to carry the load successfully. This capacity, in turn, is partly a matter of attitude, and attitudes defy objective measurement. A community that gets very jittery about its debts has less capacity to carry its burden successfully than one that does not. But the accurate measurement of jitters, present or prospective, still remains to be mastered.

Capacity to Carry the Debt Load

Nonetheless, it is possible to throw some light on our capacity to carry the debt burden by studying key economic elements that can be measured with some degree of accuracy. The following paragraphs indicate how some of these key economic elements stand.

Compared with our national income, the total volume of our debts, public and private, is still well below the level of 1929, when it proved to be too big for the good of the country. Our total debt is now 113% greater than the national income whereas in 1929 it was 146% greater.

There are several other cheering facts about our debts. One is a sharp decline in interest rates which makes the cost of carrying our debts relatively much less than it was in 1929. It took 8% of our total national income to carry our debts in 1929; it takes only about 5% of the income today.

More Cheering Facts

We also have much more ready cash now than in 1929. Today individuals and corporations hold a total of $269 billion in cash or its equivalent which is almost twice as much as the portion of private short-term debt (about $140 billion) that is subject to sudden demand for payment.

Many students of the subject cite the relatively low cost of carrying our debts and the large volume of cash on hand, and reach the comfortable conclusion that our debt burden is nothing to worry about. In further support of this view they emphasize the fact that no important part of our debt is owed abroad. Hence, they reason there is not the danger, so conspicuous in Britain since the end of World War II, that our economy will be upset by the necessity of making heavy debt payments to other countries.

Some Dangers of Present Debt

However, the nature of our debts presents dangers that it would be foolish to ignore. This is true of both the debt of $267 billion owed by the federal government to its citizens and the $330 billion in private debts owed by some citizens and corporations to others.

Public debt can be a dangerous kind of debt because government has the power to print money or to create its equivalent by expanding bank credit. Of the $215 billion that the federal government borrowed during World War II, over $90 billion was borrowed from banks. This was the largest single contributor to the inflation of prices that since the war has robbed the dollar of about half of its purchasing power, and thereby robbed the buyers of government bonds of about half the purchasing power these bonds were supposed to represent.

If, as is quite possible, a new emergency should again require the federal government to borrow heavily while its debt remains so high, it is doubtful that the public would be avid to buy its bonds. Hence, the government might again be forced to resort to the inflationary process of relying on bank credit.

Private debts can be dangerous if the people take on new debts more rapidly than is justified by the growth of business or by their ability to repay. Last year bank loans were increased by the imposing sum of about $6½ billion, which represents an increase of about 11% in total loans outstanding. This is almost twice as much as the increase in the volume of business over the same period. Installment credit for consumers increased by $3 billion last year, again an increase in debt about twice as great as the increase in business volume in the fields where the credit was used. It is also the fastest rate of such growth in our history.

Constructive Use of Credit

So long as the expansion of credit does no more than keep pace with expansion in the volume of business, the expansion is constructive. Also, when credit is expanded to acquire resources and equipment that will enlarge the volume of business a little later, that use is clearly constructive. But when private credit expansion begins to run ahead of business growth, it is time for us to be heads up. Such credit expansion courts price inflation. It also creates a forced draft under business so that, if credit is cut off, there may be a painful drop.

To give a summary answer to the question: *Is the level of debt in the United States a danger to our prosperity?* — the answer seems to be, "Not at the moment." We owe nothing abroad. The interest burden on present debt is relatively small, and we appear to have the resources to handle the short-term debt. Yet both the total amount of debt and the recent rapid increase in total private debt, especially the latter, are enough to signal for caution. We need restraint on the part of business and consumers to avoid expanding private borrowing at an excessive rate. The federal debt needs to be reduced and put in more manageable form. If these things are done, we can proceed to build a sound prosperity.

McGraw-Hill Publishing Company, Inc.

TEXTILE WORLD
March, 1953 - Vol. 103 - No. 3

SAFETY

▶ Accidents have been on the increase since the defense program started in 1950. The textile industry has been spared most of the conversion pains that caused this increase. Now is the time for the textile industry to show itself to be the safety leader of American industry.

▶ To study what makes a safety-minded mill, three mills were selected by TEXTILE WORLD on the basis of their showing in the Alabama Safety Contest. The safety activities at these mills demonstrate that there is no formula for safety consciousness: each mill has to adapt safety techniques to its own operations. You can use this study as a take-off point to strengthen or develop your own program.

By THOMAS B. WINSTON, Assistant Editor, TEXTILE WORLD

A TEXTILE WORLD REPORT TO MILL MANAGEMENT

Manpower Policy Group Asks for Stepped-Up Safety Efforts

▶ **The National Labor-Management Manpower Policy Committee, composed of top-level labor and management advisors to the Office of Defense Mobilization, urges management, labor, government, and private safety groups to intensify their efforts to reduce industrial injuries.**

JOB INJURIES must be prevented to conserve the nation's manpower and promote the defense program. Since 1950, many new workers have entered the labor force and many old workers have been shifted to new jobs. As a result, injuries have increased in contrast to the downward trend during the preceding 4 yr. Occupational injuries were 12% higher in 1951 than in 1949.

Most work injuries are preventable. Tested means of reducing production casualties are available. Safety experiences by firms in almost every industry have demonstrated that the use of available knowledge can produce outstanding records in accident prevention. Over 70% of today's occupational injuries occur in establishments without organized safety programs.

The responsibility for reducing work injuries lies primarily with employers and workers. But safety is a joint enterprise. It requires close cooperation of labor, management, appropriate government agencies, and private groups concerned with promoting safety activities.

These recommendations deal primarily with occupational injuries, but

From a policy statement issued by the Office of Defense Mobilization.

A COMER CUP is presented to the winner in each division of the Alabama Safety Contest. A mill gains permanent possession if it wins three consecutive years. The trophies were donated by Hugh Comer, president of Avondale Mills.

There Is No Formula for Safety Consciousness

The textile industry does not show the increase in accidents shown by the nation as a result of defense conversions and disruptions. The textile accident rate has decreased steadily over the past 10 yr. But this record is no reason to ignore the plea for stepped-up safety efforts. The mills that brought the rate down will continue to have low rates. The mills that continue to have high rates can take a hint from these mills.

There is no formula for figuring out how to develop safety-minded workers. About the only thing common to the three mills in this study is safety consciousness. You can't imitate the efforts in another mill and expect to duplicate its results. But you can find out how other mills handle safety and adopt techniques that fit your operations. The safety record at Russell Mills shows that a formal safety program is not necessary to have a safety-minded mill. But if you don't have a low frequency rate, you can use some kind of a safety program.

there is a need to prevent other accidents as well. Job-safety programs should be planned to encourage the prevention of accidents wherever they may occur.

What Employers Can Do

Employers should recognize that safety is their legal and moral obligation and take the following steps to prevent job injuries:

1. Provide for a safety program and take positive steps to carry out the program

2. Make accident prevention a definite executive responsibility and assign a full-time safety director where practicable

3. Investigate all accidents to prevent recurrence

4. Keep and analyze accident records

5. Provide safe plants, machinery, and equipment

6. Place no new machinery or equipment in operation unless full attention has been paid to its safety

7. Plan and arrange all processes and operations with careful attention to safety

8. Maintain a system of inspection to discover correctible hazards

9. Train and maintain safety-minded supervisors

10. Train and stimulate employees to follow safe work methods and take an active interest in the safety of themselves and their fellow workers

11. Make a full report of accidents, as requested or required, to the appropriate State and/or Federal departments administering industrial health and safety laws.

Nine Sources of Safety Service

1. National and community safety councils
2. Insurance carriers
3. American Society of Safety Engineers and other engineering associations
4. American Standards Association
5. Employers' associations
6. Labor unions
7. State and Federal departments of labor
8. State and Federal public health services
9. State and Federal regulatory agencies

What Employees Can Do

Employees and unions should recognize that safety is their moral obligation and take the following steps to prevent job injuries:

1. Use all safeguards

2. Study and carefully follow safety rules and regulations

3. Work actively on safety committees or other safety activities

4. Follow the safe way of working on each job activity

5. Watch out for the safety of fellow employees

6. Report all hazardous conditions promptly to the proper supervisor

7. Promote accident prevention through publications, meetings, and educational courses

8. Contribute ideas, suggestions, and recommendations for the improvement of safety.

Why These Three Mills Were Selected

The three mills represented here were selected because they have been consistent leaders in the Alabama Safety Contest since it was started in 1942. Tallassee and Russell Mills have been leaders in the Spinning and Weaving Division, and The Linen Thread Co. has been a leader in the Spinning Division. (These divisions are just general classifications. Russell Mills, for instance, knits and makes garments and also spins and weaves. The Linen Thread Co. has quite a few heavy twisters as well as spinning frames, so the classifications can't be taken too literally.)

The Alabama Safety Contest is open to all textile companies in Alabama. The contest, sponsored by the Alabama Cotton Mfg. Assn., is administered by the Division of Safety and Inspection, Alabama Dept. of Industrial Relations. A new contest starts each year.

A traveling cup is presented to the winner in each division. These cups are known as the Comer Cups in honor of Hugh Comer, president of Avondale Mills, who donated them. A company gains permanent possession if it wins 3 yr. straight.

Not all mills in Alabama participate in the contest. R. C. Moyer, general manager of The Linen Thread Co., Blue Mountain, Ala., says, "I don't see why more mills don't get in this contest. It did us a lot of good. Nobody likes to be last. The contest is no trouble—all you have to do is send in your figures."

At Russell Mfg. Co.--

Each Supervisor Handles Safety His Own Way

"WE DON'T HAVE a formal safety program. The key to safety at Russell is the personal interest in the welfare of the workers shown by the officials of the company. We have basic safety principles that we stress with our supervisors. They in turn promote safety in job training and supervision. We're not interested in safety records; we're interested in people."

That's how Lem Coley, personnel director, describes safety at Russell Mfg. Co., Alexander City, Ala.

Russell has been one of the top three in the Alabama safety contest seven times in 10 yr. That's a pretty good record for a mill without an organized safety program.

Company Attitude Is Basic

The frequency rate at Russell, though still well below average, has climbed the last couple of years, partly because of the emphasis the company has placed on workers reporting minor injuries. The more cuts and bruises that get into the clinic, the greater is the chance that a minor accident will result in lost time: the doctor might tell a man with a hurt finger to stay home and soak it. The clinic at Russell is part of Russell Hospital, which is run by the company. The hospital accepts nonemployees as well as employees because it is the only hospital in town. Russell has been successful in getting workers to report minor injuries, and every mill knows that this is a hard job to do.

Compensation for accidents is willingly paid by Russell. There is never any question about accidents except to determine their cause to prevent recurrences. Russell does not have light jobs set aside for injured workers. Russell prefers to pay compensation and take the lost time until the worker can return to full-duty status.

The two principles that guide Russell's operations are fair workloads and adequate supervision. These principles are thought to be as important to safety as to quality. An overloaded worker or an overloaded supervisor is one of the greatest hazards a mill can have.

Another reason for the safety record at Russell is the low turnover in personnel. A lot of the hiring is rehiring. The employees just like to work for Russell Mfg. Co.

ACCIDENT POSTERS on the job remind the employees at Russell Mills that getting hurt is no fun. "People read posters, and don't think they don't," says a superintendent at Russell.

Safety Is Part of the Job

Safety is handled by each superintendent of the five Russell mills in his own way as part of his job. The methods differ as the superintendents differ.

The superintendent of the knitting and cutting mill, Manley Smith, thinks that proper and thorough training and keeping the machines in working order are important for safety. A meeting of all supervisors is held every day mainly to talk about quality, but all phases of the operations, including safety, are covered.

W. O. Bozeman, superintendent of the bleachery, reports that he tries to keep an eye out for dangerous habits that develop. He thinks that sometimes a worker will become so familiar with his job and equipment that he begins to get careless.

Another superintendent, Harlan Blankenship, relies on personal contact. He goes around and cautions individual operators about the particular job hazards. He believes that many minor injuries can be prevented by good equipment and proper procedures. For instance, he likes aluminum bobbins because doffers don't get splinters in their fingers. Showing an operator how to place a tube on a lap winder by holding it on top instead of the bottom prevents smashed fingers.

When an accident does happen, Harlan Blankenship goes around and explains to everyone exactly how the accident happened and how such accidents can be avoided.

The most serious accident in years at Russell happened in the picker room. A worker lost a hand just half an hour after he had been cautioned about the very danger. The superintendent showed the hand to every worker in that mill. This safety reminder is thought to be a very effective technique.

"People read posters, and don't think they don't," says one of the Russell superintendents. Russell uses a poster series put out especially for the textile industry by Textile Enterprises, Inc., Atlanta, Ga. A safety poster comes up approximately every fourth week. If a poster is left up too long, it becomes only a part of the wall.

Fire Inspector Visits Weekly

Russell has a man who makes a regular inspection of fire extinguishers. This man tries to get around to every mill once a week. He keeps alert for safety hazards as well as fire hazards—another principle of safety at Russell. Everyone who makes trips through the mills—the production superintendent, the personnel director, the maintenance engineer, and the officials of the company—is alert to hazards and dangers.

The personnel office gets a report of clinic calls. The accident slips are checked for accident repeaters. The clinic report form is currently being revised so that one can tell at a glance the nature of the accident, whether it was lost-time or not, and when the accident happened.

A departmentalized safety booklet is being prepared for distribution to the employees and for instruction of new employees. The booklet is to have cartoon illustrations, as well as explanations of dangers.

At Tallassee Mills--

Two-Man Department Controls Safety Program

IN 1951, TALLASSEE MILLS' 2,586 employees worked 5,265,037 manhours without a lost-time accident. But safety at Tallassee is not a one-shot record. Its average-frequency rate for 1948, 1949, 1950, and 1951 was 0.46; its average rate for 1941 and 1942 was 8.80. This decrease in accident frequencies proves that Tallassee's safety program has paid off.

Safety Director Is Full-Time

The safety activities are a function of the Safety and Training Department. However, the training duties of this department were curtailed in favor of departmental training. The only contact the safety department has with new employees is an eye check. Each new employee is given an industrial-vision, job-placement check on a Keystone Telebinocular. Safety is talked about at this time. Fire protection is also a responsibility of this department.

The safety department has a full-time head, J. D. Wisener, and a full-time assistant, William I. Broach. The department operates without formal authority; but if a machine has to be stopped as a safety precaution, either of these men can ask that the machine be stopped in the name of the superintendent. Inspections can be made at any time, and the men are free to roam the mill at will.

Both J. D. Wisener and Bill Broach have had mill experience, and they stay on personal terms with the workers. J. D. Wisener has to spend a good deal of his time keeping track of records and doing paper work but spends at least half of his time in the mill. Bill Broach is free to spend all of his time in the mill except when he is working on an accident case. Mr. Wisener thinks that at least one man on every safety team should be familiar with textile operations; if the safety director is a personnel man, his assistant or co-worker should have a technical background.

Regular inspections are made of all ladders, fire valves, goggles-cleaning stations, and first-aid kits. These specific inspections are necessary, but the success of the safety program at Tallassee can be explained only as a safety communications program.

Inspection Is Continuous, Informal

Both men spend a lot of their time in the mill. As Bill Broach goes through the mill changing safety posters or checking bulletin boards, he has an opportunity to make personal contacts with the employees. He thinks that personal contact with the man on the job is the best way to locate hazards in methods and equipment. Observation has proved to be the best way to locate traffic hazards.

An example will demonstrate the effectiveness of this approach. Bill Broach was passing through the quilling room and stopped to talk with a man operating a quiller. He noticed calluses on the man's thumb. He discovered that the man was left handed, but was using right-hand scissors. The scissors were converted to left-hand scissors in the machine shop, and the man had no more trouble.

Accidents that require more than simple medication call Bill Broach into action. When a worker gets hurt, his supervisor reports the injury to the safety office. Bill Broach meets the man in the first-aid room and dresses the injury if it is not too serious. If necessary, he makes an appointment with the doctor of the worker's choice, takes the worker to the doctor, and brings him back. If the worker is told to stay out, Bill Broach reports the results to the supervisor. For emergency cases, each department has a collapsible stretcher, and Bill Broach keeps a Stretcherette, which folds into a small 5x8-in. package, in his car.

A BULLETIN BOARD at each entrance to the Tallassee plant keeps the employees posted on the accident record. The panel of posters provides pictorial safety reminders.

Both men in the safety department are approved Red Cross first-aid instructors. They give first-aid instructions as well as first-aid treatment.

Committee Is Discussion Group

Two employees from each department make up the safety committee. About 30 employees serve at a time. The employees are selected by the supervisor on a rotating basis. Second hands occasionally serve on the committee, but not as a general rule. Committee members serve for 2 mo. Meetings are held every 2 wk., so the committee is intact for four meetings. Membership on the committee is voluntary, and no extra pay is given. Members wear a special badge identifying them during their time on the committee.

The committee is organized as a discussion group, and all aspects of safety are covered. Movies are the only canned device used; Tallassee recommends movies because they give good ideas of safety precautions.

Since a new group is organized every 2 mo., the first meeting is devoted to an explanation of the duties and responsibilities of members. They are told how to make a written report, to make minor inspections, and to correct unsafe practices. They are encouraged to take safety problems to the second hand before going to the safety department. Each member is asked to talk to every person in his department for a minute or two about safety. But they are reminded that they have no formal authority and must

CLEANING STATIONS for glasses and goggles are located at strategic points at Tallassee. A worker cleans his glasses at the station in the cloth room. These stations are inspected regularly.

FIRST-AID KITS are provided for each shift to prevent any friction between shifts because of an empty kit. The key is kept by the second hand, who keeps track of first-aid accidents.

operate on a person-to-person basis. Finally, each member is asked to look around his department and make a note of anything worth discussing at the next committee meeting.

At the second meeting, the committee talks about the things they found in various departments. Bill Broach leads the discussions. When a question is asked, he puts the question to the person in the committee he thinks is best qualified to answer. To keep discussions going and the members interested, he has found it better to let members rather than the leader answer questions.

All safety meetings are planned, but they have no specifically planned program. Bill Broach often uses posters from The National Safety Council as a take-off point to stimulate discussion. He discovered that canned poster talks do not work altogether. The safety department keeps a supply of safety posters circulating throughout the plant, and only the ones of direct interest are used in the safety meetings. First-aid and job methods are discussed as they become involved.

Another effective tool in developing safety-minded workers used at Tallassee is to get the members of the committee to figure the cost of accidents to themselves. The difference between compensation and the weekly paycheck is great enough to make every worker want to stay safety conscious.

Supervisor Is Best Safety Tool

The safety department realizes that the best safety tool in any mill is to have safety-minded supervisors. The only way to prevent such accidents as doffers' strained backs is to properly instruct them in lifting methods. The safety department lends a hand here with oral precautions and poster reminders. Supervisors are asked to talk safety to each employee at least once a month.

The supervisor is consulted about the possibility of relocating any worker who has an injury that keeps him from his job but who wants to get back to work. Tallassee doesn't make jobs but will change jobs for an injured worker if one is available. The safety department thinks that a recently injured worker is a good salesman for safety.

The safety department at Tallassee has one more safety reminder that it is proud of. When Mrs. Billingsley, the secretary, answers the telephone, she doesn't say just "Hello." She says, "Good morning, Safety Department."

At Linen Thread Co.—

Management Safety Committee Coordinates Activities

THE SAFETY PROGRAM at the Blue Mountain, Ala., mill of The Linen Thread Co. features a safety committee with permanent and rotated memberships, a regular safety inspection of the mill, and an interdepartmental safety contest. The program is guided by a Central Safety Committee organized under the Labor Department in the home office in Paterson, N. J. This committee has a permanent membership of five or six people from the accounting, mechanical, and manufacturing departments. It circulates accident causes through the Linen Thread chain of six mills. If an accident that might happen at Blue Mountain occurs in any of the mills, the Blue Mountain mill gets a report.

Safety Director Is Part-Time

J. H. Frazier is safety director at Blue Mountain. He has many other duties, but he devotes about 10% of his time to safety. He keeps the accident records, writes the safety-committee report to the Central Safety Committee in Paterson, and stays on top of safety activities. He is a permanent member of the safety committee.

The safety committee was organized in 1944. R. C. Moyer, general manager, says, "The committee was organized partly as a result of the Alabama Cotton Manufacturers' safety contest. That contest had been organized a couple of years before, and we were in pretty bad shape. Some of those mills hang up high records to shoot for. Competition is good for any mill. It's just natural for an American to want to come in first."

The safety activities at Blue Mountain are coordinated by this committee of seven members. Four committeemen are permanent members and attend every meeting. These members are the safety director, plant nurse, master mechanic, and the plant safety inspector. One of the other committee memberships is rotated among the general manager, assistant manager, and superintendent; each attends every third meeting and represents top management on the committee. The other two memberships are rotated among the supervisors; each supervisor serves as his turn comes up.

The safety meeting follows an agenda set up by the Central Safety Committee, and the report to Paterson follows the agenda form. The agenda covers a discussion of lost-time accidents during the month, an analysis of injuries treated in the first-aid room, a review of safety suggestions, and a general discussion of plant safety. The committee tries

to assign causes to the accidents and determine ways to prevent recurrences. Accident statistics are included in the report to the Central Safety Committee.

The program is coordinated among the supervisors by their rotated presence on the safety committee, by informal conferences, and by special meetings. These meetings are called for movies, explanations of accidents, or for any special reason. The safety director keeps his eyes open for films and other material worthy of a called safety meeting.

Regular Safety Inspection

Safety inspections of the Blue Mountain mill are made at least once a month, and sometimes twice a month, by Ross Allen. Mr. Allen is in charge of the methods and standards department, but he serves as a permanent member of the safety committee and spends about 5% of his time in the interests of the safety program.

For a checklist, Blue Mountain uses a cotton-mill safety-inspection form prepared by Liberty Mutual Insurance Co. for its inspection program. This form has saved Blue Mountain the trouble of compiling a checklist. Furthermore, Ross Allen reports that the checklist would be hard to beat.

A report of the inspection is made to the safety committee, and the committee discusses any problems brought out by the inspection. If any unsafe conditions have to be corrected, the master mechanic is responsible for their correction and has the authority to see that corrective actions are carried out. However, this procedure is flexible. If a situation can be better dealt with by a supervisor, a conference is held with him.

In addition to this regular in-plant safety inspection, a safety engineer from the insurance company tours the mill at least every 2 mo. One of the management men at Blue Mountain says, "That insurance inspection is a good service. The man goes around with one of our men and talks to supervisors and second hands. He does a good job of inspecting. He knows textile operations, and he's interested in our safety program. That's what counts; he's really interested in safety. We will cooperate with anybody who will help us."

Once a year, the state inspector makes a complete inspection and makes recommendations. His recommendations are promptly carried out.

Departments Compete for Cup

Blue Mountain Mill has an interdepartmental safety contest that runs for 6 mo. at a stretch. Six months was selected because interest lags if a contest runs too long, but the contest has to be long enough to be meaningful. The winning department gets its name engraved on a traveling cup. If a department wins three times, it keeps the cup. No. 3 Spinning has possession of the one retired cup.

The contest is judged by a formula worked out by the safety director. He wanted a formula that incorporated both the frequency and severity rates, but he settled for one that is based on the frequency rate only. Each department has a handicap rated on a basis of the hazards present in the department. The least hazardous department has a handicap of 100%, and the handicaps go on down to about 75% for the most hazardous department. Comparison is then made by multiplying the frequency rate by the percentage rating. This system is a fair way to judge, since allowance is made for differences in natural hazards.

Plant Nurse Gives First Aid

When a worker is injured at Blue Mountain, he reports to the foreman. The foreman fills out a first-aid card for him and sends him to the first-aid room. First-aid stations are not maintained in each department because the mill is small enough to get workers to the central first-aid room, in short order. A registered nurse is on duty in the first-aid room during the first shift and part of the second shift. After she leaves, a man trained in first-aid is available.

DANGER SIGNS are painted on the machines to mark dangerous areas. However, obvious hazards are left to be their own warning. Accidents seldom are caused by obvious hazards.

Besides treating the working employees, the first-aid room tends to the cuts and bruises of the whole neighborhood. The mill does not encourage this practice, but it thinks the service contributes to good public relations.

During lost time, the nurse makes regular calls on the injured worker and keeps in contact with the worker's doctor. If there is a light job available and the doctor approves of the worker's returning to the mill, the worker is given the light job until he can return to his regular job. There is no coercion, and nobody is brought back in "on crutches." But if a man wants to work, and if there is no chance of reinjury, he is given light work if it is available.

Machines Have Danger Signs

Danger signs are painted on machines to mark the dangerous spots. However, the really bad and obvious hazards are left to be their own warning. Blue Mountain has realized that accidents seldom result from obvious hazards.

One hazard of 4 yr. ago was the oily floor in the twisting department. The floor is still slippery; so it must have been like an icy sidewalk before the improvement program started. Blue Mountain says the floor condition is 200% better as a result of using a vacuum floor-maintenance system that includes sanding and buffing. This system is used in conjunction with special preparations for treating oily floors.

With over 7,000 twisting spindles, large machines, and carpenter shops with over 35 mechanics, as well as 27,700 spinning spindles, Blue Mountain thinks it does well to keep up with most plain spinning mills. The mill was the first mill in the ACMA safety contest to go a full year without a single lost-time accident.

Safety Program Cut Accidents Over 50%

Frequency Average

1942-43	14.45
1950-51	6.85

Safety Ideas From Blue Mountain Mills

General Safety Rules - Blue Mt. Mill

1. Report all accidents immediately for first-aid treatment, no matter how slight they seem. Failure to do so may easily result in a serious infection.

2. If there is anything about your job you do not understand, do not hesitate to ask your immediate supervisor before going ahead. He will show you the safe way as well as the right way to do it. Follow the rule: "When in doubt, don't do it."

3. Never remove a guard or protective device without specific permission from someone in charge of the machine.

4. Before starting up a machine, make certain no one is working on it.

5. Don't carry an open knife in your pocket. Either close it and put it in your pocket, or carry it point down in a substantial scabbard. Your foreman will provide you with the scabbard on request.

6. Don't leave your lunch wrappings, bottles or other trash on the floors, or stairs, or on top of a machine. Special containers have been provided for this disposal—not only in the interest of good housekeeping but also to keep you from being injured.

7. Don't spit on the floor, in corners, or under machines. Not only is this an unhealthy practice, but it may result in someone falling on the floor or into a machine. Cuspidors are provided for this purpose. Use them and help to keep your mill clean and safe.

8. Horseplay and fooling, throwing objects, teasing, and running through the mill are strictly prohibited.

9. Never point an air line at anyone for any reason. Men have been killed and others have lost their hearing and eyesight because of their friends failing to realize the danger involved.

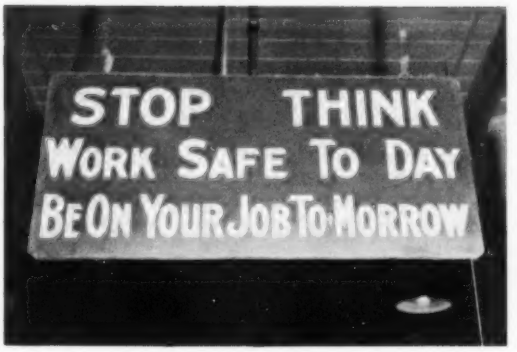
10. All employees are urged to make suggestions that will assist in safe performance of work, and to bring to the foreman's attention any unsafe conditions found in the plant.

POST general safety rules

Monthly Safety Committee Meeting Agenda

A. Unfinished business
B. New business since last meeting
   1. Accidents since last report
   2. Review of monthly safety report
   3. Analysis of principal injuries treated in first-aid department
   4. Review of quarterly workmen's compensation losses
   5. Safety suggestions
   6. General

DEVELOP a standardized meeting procedure

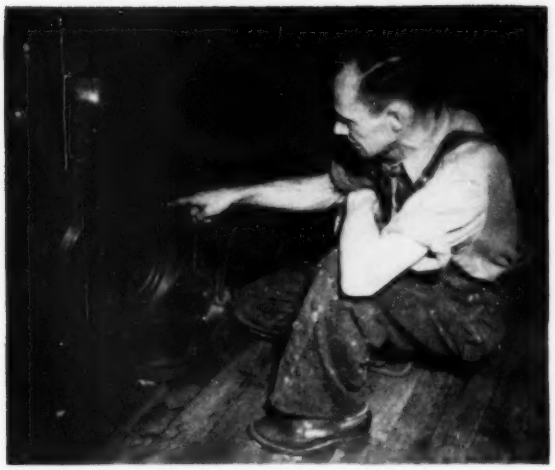


PUT UP safety signs

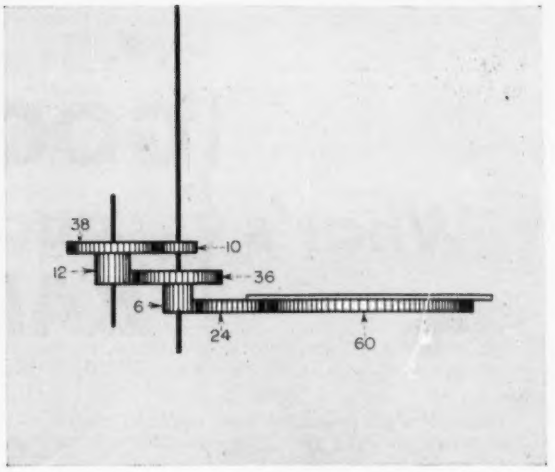
KEEP RECORDS of first-aid cases

PREPARE specialized safety booklet

Copyright 1953 by McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York 36, N. Y. Printed in U.S.A.



TURNTABLE was converted to the 14-in. can by attaching a ring to the outside of the turntable frame. The ring was made in the Avondale shops. The turntable can be reconverted to a 12-in. can by removing the four screws that hold the ring in place.



THESE FOUR GEARS were changed to convert the coiler to 14-in. cans. The 19-tooth intermediate gear was changed to a 24-tooth gear to get the turntable far enough out for the 14-in. cans. Two holes were drilled and tapped for the new location of the intermediate-gear stud.

CAN CONVERSION at Avondale Costs Only $11.25 per Card

▶ Avondale's Catherine plant, Sylacauga, Ala., timed conversion of card cans with the ordering of new cans that were needed anyway. Grinders made the conversions. The machine shop built outer rings for the turntables for $2.40 each. Four new gears cost $8.85 per coiler. Result: a complete conversion for $11.25 per card.

By THOMAS B. WINSTON, Assistant Editor, TEXTILE WORLD

14-IN. CANS give greater stability to the sliver. White waste is reported down at Catherine because fewer coils fall over. The 14-in. can runs longer than a 12-in. can, and fewer piece-ups are necessary. Drawing job loads were increased 25% after the can conversion.

WHEN THE CATHERINE PLANT needed new card cans recently, James Pasley, superintendent, decided that the time had come to convert to 14-in. cans. So he ordered 14-in. cans instead of 12-in. cans.

Then he began to look around for the cheapest way to convert the coiler. The machine builders wanted $120 to $130 for a packaged 14-in. unit, and the foundries quoted $40 to $50 for a conversion job.

"Too much," said Jim Pasley. He turned the problem over to S. L. Hardy, overseer of carding, and Mr. Hardy worked out a system for making the conversion with no outside help.

How the Conversion Was Done

Mr. Hardy reasoned that the cheapest way to convert to a 14-in. turntable was to put a strip around the outside of the 12-in. turntable instead of buying a new turntable. He worked out this problem with the Avondale shop. The shop bought castings for $0.12 per lb. and lathed down rings to fit the frame of the turntable.

Screw threads were tapped half into the turntable edge and half into the ring edge. Four screws secure the ring to the turntable by meshing with the threads in each edge. The ring can be

(Continued on page 182)

What's GOOD and BAD About SYNTHETIC

▶ Here is an unbiased evaluation of the major synthetics. The author pulls no punches in pointing out each fiber's weak points as well as the strong ones

▶ To wrap it up, Dr. Dillon gives some interesting predictions regarding the future of synthetic fibers, particularly with respect to cotton and wool

By **DR. JOHN H. DILLON,** Director, Textile Research Institute

IT IS OUR PURPOSE HERE to discuss the weaknesses of the man-made fibers rather than their manifold advantages, which have been so often lauded. In this critical analysis, however, due recognition will be given to the remarkable progress that has already been made in removing or minimizing their deficiencies. This approach, it is hoped, will be constructive as well as objective and thus may justify certain conservative predictions.

This discussion is confined to applications of fibers to clothing and decoration. Occasionally it is necessary to digress into the fields of industrial fabrics—tire cord, filtration fabrics, felts, etc.—because a fiber that may find its sole application today in an industrial fabric or cord may be just "trying its wings" for a flight into the more glamorous world of clothing and decoration.

The man-made fibers can be classified, according to their chemical natures, into four broad groups: inorganic, cellulosic, protein, and true synthetic. This classification excludes several specialty fibers, such as the alginates, and it does not include new fibers that have not passed the pilot-plant stage and have had very limited usage.

Based on a paper presented at the 119th meeting of the American Association for the Advancement of Science, St. Louis, Mo., Dec. 27, 1952.

INORGANIC FIBERS

Glass

The only important inorganic fiber is glass, which is marketed both in continuous-filament and staple form. The fiber is exceedingly strong in tension, and this strength is reduced very little when the fiber is immersed in water. It has low extensibility before break; and since it is of circular cross section, it is very brittle in bending. It is also very difficult to dye except by pigment tinting or by special techniques wherein a pigment is bonded to the surface with a resin, or a protein film is applied to the surface to take vat, direct, acid, or chrome colors.

The glass fiber is almost completely hydrophobic, although a small amount of moisture is absorbed on its surface. It has good electrical properties and finds extensive application in high-temperature insulation. It is truly flameproof and is excellent for drapery materials, particularly those used in public places. It has chemical resistance to many acids and solvents and is used extensively in filter cloths. Because of its great strength and good elasticity, it is well suited as a reinforcing material for plastics. It has found military application in body armor and structural members for aircraft.

The glass fiber seems to have very limited application for apparel fabrics, but this condition should not be very disturbing to its manufacturers because of the vast field of industrial uses for which it is so well adapted. It is not particularly high priced. Glass textile yarns rank fourth in production and sales among the man-made fibers (behind viscose rayon, acetate, and nylon), and rapidly developing industrial requirements suggest that the production curve for glass fibers will continue to rise sharply.

CELLULOSIC FIBERS

The cellulosic man-made fibers constitute about 20% of textile-fiber consumption in this country. The textile industry has had long experience with them, and they have now reached a point of good consumer acceptance in many types of fabrics. They occupy a point of great economic advantage in that they are all based upon cellulose, a plentiful and cheap raw material. They may be considered under two broad classifica-

FIBERS

Three Big Hurdles for Synthetics

1. There is only a flimsy relationship between the properties of the high-polymer molecule of a fiber and those of the finished fabric. If a mill chooses the proper yarn and fabric construction and uses adequate physical and chemical finishing procedures, it can often ignore the chemical nature of the fiber and still obtain the finished-fabric properties it desires. Furthermore, certain subjective qualities such as hand and drape that must be met in an apparel fabric defy quantitative description. It is no simple matter to establish what properties a synthetic fiber should have to give fabrics with predetermined characteristics.

2. Any synthetic fiber must initially be processable with existing textile machinery that has been developed over a period of centuries for use with the natural fibers. The investment in machinery for a given mill is very great, and major changes cannot be made overnight, no matter how promising the new fiber may be.

3. The old fibers have some amazingly good properties that are hard to achieve in a synthetic fiber at a reasonable price. There is every reason to expect that the principal natural fibers will not rest on their laurels. Important improvements in their properties have been made without serious increases in cost. The synthetic fibers face a constantly improving set of natural competitors, some of which can be bought at prices that are below the raw-materials costs of the acrylic and polyester fibers.

tions—regenerated-cellulose types and cellulose-derivative types. The regenerated celluloses include viscose rayon, cuprammonium rayon, and saponified acetate. Cellulose acetate is the only important member of the derivative family. The original man-made fiber, cellulose nitrate, no longer has textile applications.

Viscose Rayon

Viscose rayon is by far the most important of the regenerated-cellulose fibers. It is distinctly hydrophilic. Regular textile viscose is of rather low tenacity. For many applications, however, the range of strengths is adequate, although it would be highly desirable to increase the wet strength in order to improve its mediocre laundering performance. For applications requiring higher strength, viscose is supplied in higher tenacities and lower extensibilities produced by increasing the fiber orientation. Loss of tenacity with increasing moisture content is not as great for the highly oriented viscose—about a 50% drop from "dry" to wet conditions as compared to 100% in the case of regular textile viscose.

The failure to reproduce the stress-strain behavior of cotton in the viscose fiber should not be considered a great disadvantage; in fact, it may be considered most fortunate for it makes viscose rayon one of the most versatile fibers at our disposal. In continuous-filament form it can be used in applications where silk was once supreme; and in staple form it can be employed alone or in blends with wool, cotton, and other man-made fibers to give a host of widely varying fabrics.

The high moisture absorption of viscose rayon is an advantage in many respects. Viscose staple can be blended with many of the hydrophobic synthetics to induce body comfort, dyeability, higher ironing temperatures, freedom from local melting, and alleviation of the static-electrification problem. Accompanying its high moisture absorption is its excellent dyeability. Viscose fabrics can be dyed or printed at low cost with a wide variety of dyestuffs, to any degree of brilliance, and with colorfastness properties to suit any need.

This hydrophilicity, however, is not an unmixed blessing, for with it there is the extreme swelling that contributes so much to the instability of rayon fabrics. Viscose rayon is a "dead fiber," even under dry conditions, but when it is swollen it is extremely plastic and soft. Thus it is not surprising that extensive work has been done to reduce its swelling and improve its resilience. Resin finishes and cross-linking treatments developed in recent years are very effective in reducing fabric instability and inducing wrinkle recovery. But these processes must be carried out very carefully in order not to reduce the strength and tear resistance.

Textile viscose rayon has a long way to go before it will compete with dry wool or wet hydrophobic fibers in resilience. Yet it is far enough along in this direction so that it may be blended with wool or the newer synthetics to yield fabrics with quite adequate crease retention, wrinkle recovery, and handle. It has the capacity for inducing in blends other good properties inherent in its high moisture absorption and, most important, a substantial reduction in cost.

Viscose rayon offers no serious difficulties as regards ironing range, local melting, pilling, or static electrification. It is not outstanding in abrasion resistance, nor are its tactile properties very good. Like cotton it is quite flammable, but considerable progress has been made in reducing this deficiency. A number of surface treatments to produce flame retardance have been developed, but perhaps the greatest success has been in the field of reacting the regenerated cellulose with inorganic salts.

It must not be assumed, just because viscose rayon is one of the oldest of the man-made fibers, that it is a static textile material subject only to a piecemeal patching up of its defects. Several capable research organizations are well along in their quests for a quite different and highly improved type of regenerated-cellulose fiber. It

Principles of Fiber Survival

We hear a great deal these days about the battle of the fibers. In reality, there is no battle; it is only those who are marketing them who are involved in wars of words. Any self-respecting fiber knows that it must meet three basic requirements if it is to survive—availability, reasonable price, and superior properties for at least one important application.

is interesting to note that French scientists have recently reported a new type of filament viscose with an improved dry tenacity and ratio of wet to dry tenacity. This new viscose has excellent dyeing properties, and the use of extremely fine deniers has resulted in a suppleness that counteracts the stiffening effect of the higher D.P. This high-D.P. viscose may be quite unsuitable for staple-fiber applications. However, this development should be comforting to the chemist who hates to see a perfectly good long-chain molecule degraded simply to permit processing into the form of a fiber.

Cuprammonium Rayon

Cuprammonium rayon, sometimes referred to as Cupra or Bemberg rayon, is another regenerated-cellulose fiber. It occupies a relatively minor position today in respect to rayon produced by the viscose process but still is produced in quantity and finds application in knitted and woven wearing apparel, upholstery, and decorative fabrics. It is very similar in chemical structure and physical properties to viscose rayon, but the fibers are of circular cross section, as compared to the irregular star-shaped cross section of viscose. Very fine fibers can be spun by this process, and there is less degradation of the cellulose. It is somewhat more expensive to produce than viscose rayon, and its future is doubtful, except for those applications where the circular cross section endows it with unique characteristics. On the other hand, it seems possible that by exclusion of oxygen from the ammoniacal copper-hydroxide spinning solution, a very-high-D.P. regenerated cellulose with interesting properties might be obtained.

Saponified-Acetate Rayon

Perhaps this interesting fiber, marketed under the name Fortisan, should be included among the cellulose derivatives since it begins its life as a cellulose-acetate fiber. However, after deacetylation under tension, it ends up as essentially regenerated cellulose. It is one of the strongest fibers known but has a very low extensibility to break. Consequently its fatigue life in tire cord, like that of glass, has been rather discouraging. It has found important applications, among them its use in continuous-filament yarns in nonrigid airship fabrics. It appears to have properties that should make it very useful in a number of other products such as special types of sewing thread. Saponified acetate is interesting because its tensile properties are affected by moisture and temperature as is cellulose.

For the Figures . . .

Complete data on fiber properties may be found in TEXTILE WORLD'S Synthetic-Fiber Chart, Sept. 1951.

Like all highly oriented regenerated celluloses, saponified acetate presents difficulties in dyeing and is rather expensive to produce. Yet, if it could be produced in a crimped staple, it might have possibilities as a competitor for the hydrophobic synthetics. Thus far it has been marketed only as a continuous-filament yarn.

Acetate

Acetate is second only to viscose in American consumption of man-made fibers. It stands first among the continuous-filament fibers. Acetate may be considered the ancestor of the newer hydrophobic fibers, for it is thermoplastic and has a considerably livelier handle in fabrics than does viscose. Acetate is on the borderline between the hydrophilic and the hydrophobic fibers, absorbing only about 6% moisture under standard conditions. It is not a particularly strong fiber. Acetate is somewhat wool-like in behavior and yields better wrinkle recovery than untreated textile viscose in equivalent fabrics. It can be blended with wool and the hydrophobic fibers in much the same way as viscose is.

Acetate is not easy to dye. An entirely new set of dyestuffs was developed for acetate, and these dyestuffs are now proving useful for some of the hydrophobics. Recently methods have been developed by which acetate can be colored with acid and vat dyes. Whether or not this development will solve the atmospheric-fading problem is not yet known. The dope-dyeing technique seems even more promising.

Acetate suffers from a number of minor ailments. For example, it is soluble in acetone, creates some static charge in processing, and is subject to the local melting trouble. It does not felt or pill, but it is very poor in ironing range. However, this problem seems to have been met over a period of years by an educational campaign directed at the housewife. In short, acetate appears to have enough good properties to counteract its weaknesses and, because it can be produced at low cost both in filament and staple, will continue to be an important fiber.

PROTEIN FIBERS

No self-sufficient regenerated protein fiber has been made. Only two types are on the market today: Ardil, the peanut-protein fiber under development in England, and Vicara, the zein-based fiber of this country.

Vicara is marketed as "the fiber that improves the blend," and this is exactly what it is and no more. The wet strength of Vicara and its wet extensibility are too low to permit its use in fabrics without a stronger blending fiber. However, Vicara is extremely effective in blends with other fibers in producing loftiness in the yarns. It is produced only as a staple fiber and is not very expensive. It dyes by any number of techniques that are satisfactory for wool; but because of its smooth surface, it does not felt. Thus, it is, as advertised, a very useful blending fiber.

Certain cross-bonding reactions can materially increase the wet strength. However, most of them involve the use of materials that produce toxicity in the treated fiber. Eventually a satisfactory regenerated protein fiber will be produced, and this fiber may cause us to revise our whole concept of the man-made fiber field.

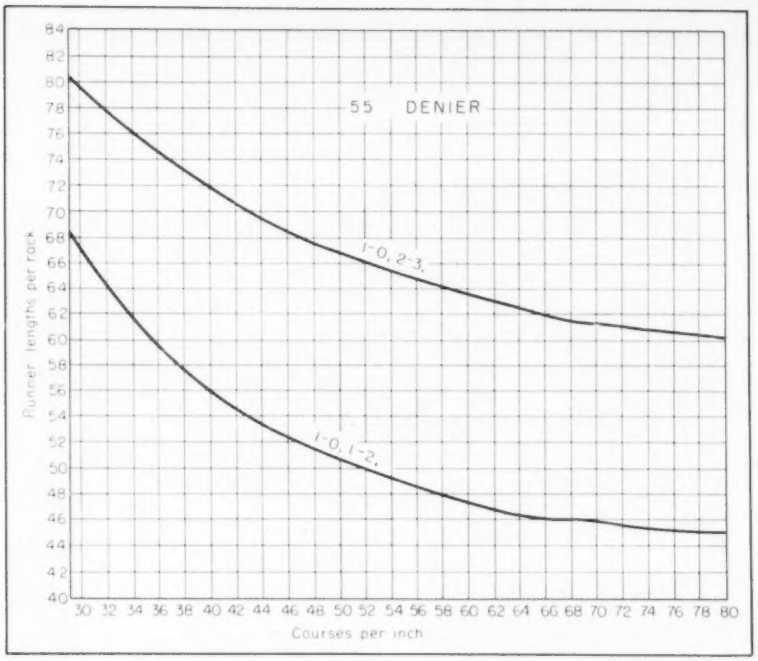
TRUE SYNTHETIC FIBERS

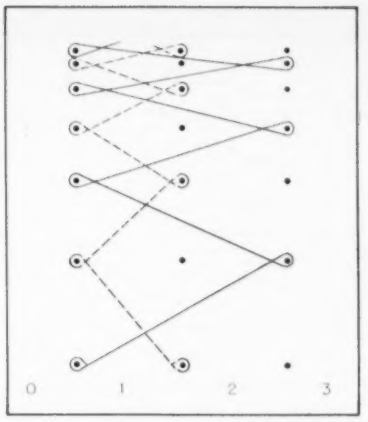
True synthetic fibers are made of coal, water, air, petroleum, limestone, and other things not ordinarily found among the sweepings of a well-regulated mill. The more important members of this group are the polyamides, the polyacrylics (including copolymers of acrylonitrile with vinyls and acrylates), and the polyesters. All of the true synthetics except nylon are strongly hydrophobic. Hence their mechanical properties change very little upon immersion in water, they have excellent durability in laundering, and some of them have remarkable wrinkle resistance and crease retention. But their hydrophobicity introduces many problems, particularly in dyeing and in static electricity.

Polyamides

Nylon, the first true synthetic fiber,

(*Continued on page 215*)





JERSEY FABRIC LAPS show how the angle of the two-needle lap changes more rapidly than the three-needle lap as the stitch is tightened.

RUNNER LENGTHS for certain qualities are found by following the vertical coordinates to the graph line and reading the runner length on the left.

Quality Changes Affect Ratios In Jersey TRICOT FABRICS

▶ Jersey fabric consumes more yarn from the front beam than the back beam, but not in the same ratio through all qualities.

—As yield increases, back-bar runners increase proportionally greater than front-bar runners

—Change ratios when you change quality

—Calculate runner lengths from this chart

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

TRICOT FABRICS with a balanced lapping movement on both bars have runner lengths, or the amount of yarn that goes into one rack (480 courses), usually the same from both beams. A number of these fabrics, including 1-0, 1-2 on the back bar and 1-2, 1-0 on the front bar, show a tendency to split.

Unbalanced lapping movements such as 1-0, 1-2 on the back bar and 2-3, 1-0 on the front bar are used to prevent splitting.

Where the back guides lap their threads over two needles and the front guides lap over three needles, about one-third more yarn will be consumed from the top beam than the bottom beam because the guides must skip over an extra needle.

Change Tensions To Vary Ratios

The number of courses per inch may be used to determine quality—a low number of courses per inch means a high yield. The quality is controlled by the amount of tension exerted on the fabric by the take-up roll and by the length of the runners. The runner lengths are controlled by the speed of the beams or the braking motion supplied by the let-off mechanism.

Since the beams are individually controlled, it is possible to differ the tension on each and vary the ratio.

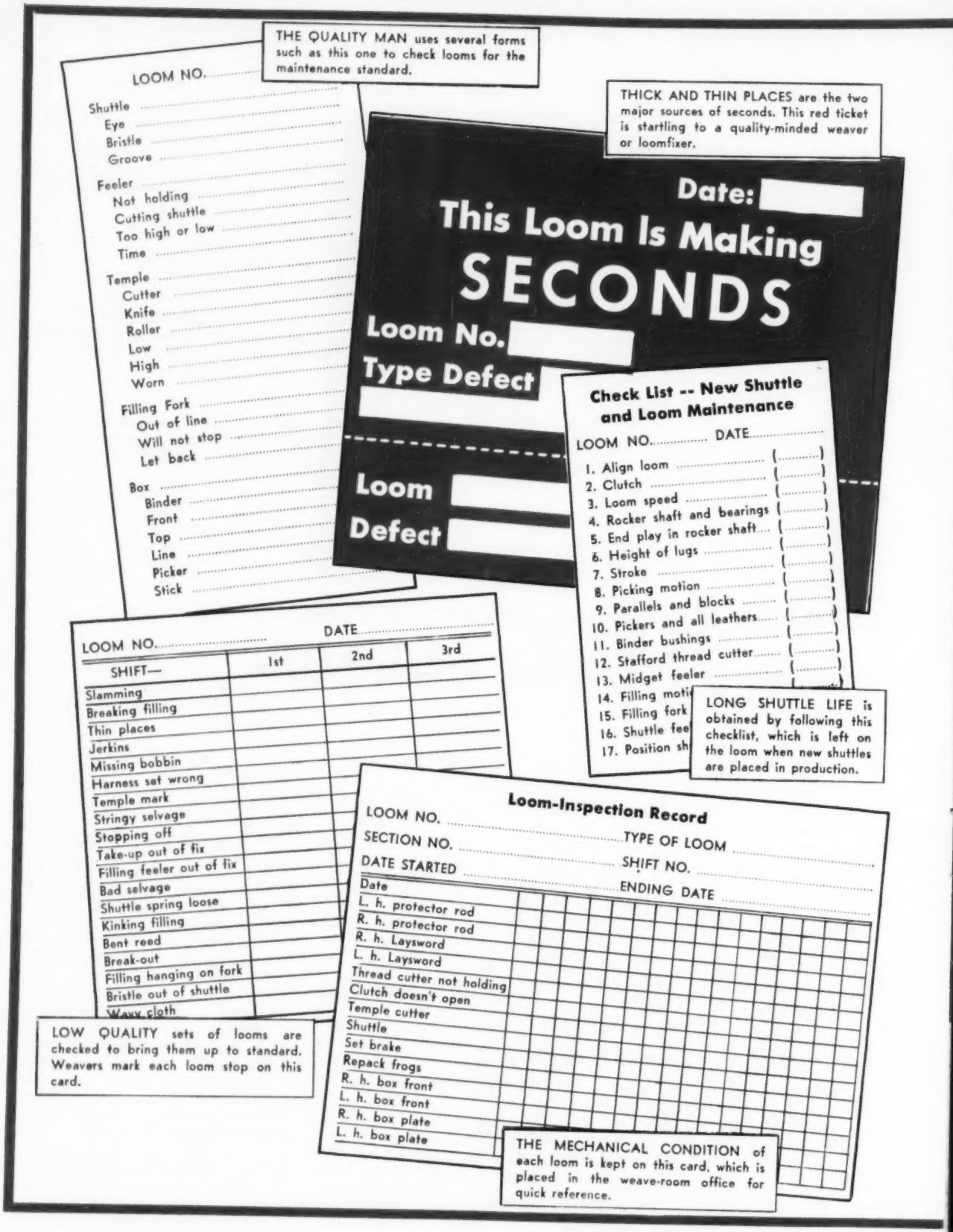
Different ratios at the same quality give various results on the finished fabric in regard to strength. More research work is necessary to determine the best ratios for each quality.

The ratio does not remain the same through all qualities, although some mills maintain the same ratio for different qualities.

The curves on the chart show how the runners increase as the courses per inch decrease. The top curve represents the front bar of a jersey construction (1-0, 2-3) and runs parallel to the back-bar curve for the high qualities. As the courses per inch become fewer, the curves tend to merge and the ratio becomes smaller.

The front-bar laps of a jersey construction drawn over a 1-2, 1-0 lap demonstrate how the ratio changes as the stitch is slackened. A tightening

(*Continued on page 200*)


THE QUALITY MAN uses several forms such as this one to check looms for the maintenance standard.
LOOM NO.
Shuttle
Eye
Bristle
Groove
Feeler
Not holding
Cutting shuttle
Too high or low
Time
Temple
Cutter
Knife
Roller
Low
High
Worn
Filling Fork
Out of line
Will not stop
Let back
Box
Binder
Front
Top
Line
Picker
Stick
THICK AND THIN PLACES are the two major sources of seconds. This red ticket is startling to a quality-minded weaver or loomfixer.
Date:
This Loom Is Making
SECONDS
Loom No.
Type Defect
Loom
Defect
Check List -- New Shuttle and Loom Maintenance
LOOM NO. DATE
1. Align loom
2. Clutch
3. Loom speed
4. Rocker shaft and bearings
5. End play in rocker shaft
6. Height of lugs
7. Stroke
8. Picking motion
9. Parallels and blocks
10. Pickers and all leathers
11. Binder bushings
12. Stafford thread cutter
13. Midget feeler
14. Filling moti
15. Filling fork
16. Shuttle fee
17. Position sh
LONG SHUTTLE LIFE is obtained by following this checklist, which is left on the loom when new shuttles are placed in production.
LOOM NO. DATE
SHIFT— 1st 2nd 3rd
Slamming
Breaking filling
Thin places
Jerkins
Missing bobbin
Harness set wrong
Temple mark
Stringy selvage
Stopping off
Take-up out of fix
Filling feeler out of fix
Bad selvage
Shuttle spring loose
Kinking filling
Bent reed
Break-out
Filling hanging on fork
Bristle out of shuttle
Waxy cloth
LOW QUALITY sets of looms are checked to bring them up to standard. Weavers mark each loom stop on this card.
Loom-Inspection Record
LOOM NO. TYPE OF LOOM
SECTION NO. SHIFT NO.
DATE STARTED ENDING DATE
Date
L. h. protector rod
R. h. protector rod
R. h. Laysword
L. h. Laysword
Thread cutter not holding
Clutch doesn't open
Temple cutter
Shuttle
Set brake
Repack frogs
R. h. box front
L. h. box front
R. h. box plate
L. h. box plate
THE MECHANICAL CONDITION of each loom is kept on this card, which is placed in the weave-room office for quick reference.

This Live-Wire QUALITY PROGRAM Improved Lane's Denims

► Quality and production at Lane Cotton Mills, a division of M. Lowenstein & Sons, have been improved by a program that includes—

A daily conference between manager and employees

Three daily quality meetings of department heads

A man on each shift who heads off seconds

By **RICHARD B. PRESSLEY,** Assistant Editor, TEXTILE WORLD

AN IMPORTANT QUALITY CONFERENCE takes place at Lane Cotton Mills, New Orleans, La., every working day. The vice president and general manager talks with 15 employees for approximately 20 min. to show them how they, as individuals, make Lane Mills. This conference sparks Lane's whole quality program.

The talks take place in the manager's office, the walls of which are covered with samples of finished denims that include standard blues and all the new sports fabrics. Among the employees are weavers, spinners, loomfixers, roving-frame tenders, and hour-rate workers. The manager discusses with them quality problems, market conditions, what to look for in current yarn and cloth defects, and how they as individuals make Lane Cotton Mills. Each of the 1,400 employees meets with the vice president and general manager, and each employee sees the finished cloth and learns his part in Lane's quality goal.

These meetings do much to improve the cloth quality and have cut the accident record to a small percentage of the former frequency and severity rate.

Lane produces only denims, and the equipment has been revamped to produce this fabric efficiently. Cards, totaling 261, feed 100 warp and 84 filling frames. There are 1,362 looms and four machines for the Sanforized process.

The work schedule at Lane is 120 hr. per week, divided into three 8-hr. shifts, five days a week. This schedule has been maintained constantly for more than 3 yr.

Everyone Talks Quality

Quality meetings are also held each day at 6:15 a.m., 10 a.m., and 4 p.m. in the cloth room and are attended by the quality man (loomfixer), second hands, assistant overseer, overseer, and the superintendent. Cut-outs (damaged cloth such as thick places, thin places, and overshots) are saved by the cloth inspectors and are discussed at the meetings. Seconds trends of the day are quickly caught, and preventive measures are taken by weaveroom and yarn-processing overseers.

Graded cloth is easily identified by loom number, shift, weaver, and loomfixer so that seconds can be traced quickly to their sources and eliminated.

Cloth Grading Is Critical

Cloth is inspected on tables. Since it is desirable for the supervisors to know how any style is looking in regard to seconds at all times, each inspector examines as few different styles as possible. A spot check by the cloth-room overseer can determine how good or how bad any cloth is at any time.

Burling is done on regular cloth frames. All major defects are cut out of the cloth.

MacBeth lights are used to shade solid-color denims. The lights are placed lengthwise in the center of the shading room and light both sides of the room. One employee on each side of the lights matches four colors at a time. Each bale of finished cloth has a swatch attached so that the cutter can immediately see the cloth shade of the bale.

Seconds, too, are matched for shade as closely as first-quality cloth.

Quality Man Heads Off Seconds

One quality man (a trained loomfixer) on each shift works directly between the burlers and inspectors and the weave room. He receives cloth-defect tickets from the cloth room and

(Continued on page 234)

Fewer Looms Produce More Cloth

Lane Cotton Mills needed to increase the amount of cloth produced because new developments in denims for sportswear had expanded its market. The mill went about increasing production in a way that seemed to be backwards—it reduced the number of looms from 2,300 to 1,362.

But that move paid off. All looms were placed on full three-shift production. Until 3 yr. ago, many looms on the third shift were not run constantly.

Now, with fewer looms, Lane is able to supervise employees more closely, train employees to do better jobs, and keep looms in better mechanical condition to produce better fabrics.

The results are that even with 938 fewer looms, Lane produces 100,000 yd. more cloth per week than it did 3 yr. ago.

Let's Get Up to Date on SEQUESTERING AGENTS

By J. V. BOONE, Geigy Co., Inc.

Adapted from a paper presented before the Piedmont Section, AATCC, at the Clemson House, Clemson College, S. C.

1. What is a sequestering agent?

In nontechnical language, it is a substance that has the power to absorb ions and render them ineffective. The troublesome ions are thus kept in solution but are incapable of reaction with other chemicals in the solution.

2. Will all sequestering agents perform in all cases?

No. Specific types are needed for specific jobs. In boiling alkali, for instance, a special type is needed to render iron inactive; this particular type will not work well in low pH ranges.

3. How do I determine what type to use?

Sequestering agents are marketed by several dyestuff companies and chemical companies. Their representatives should be consulted about your problems.

4. Is the beneficial effect immediate?

Not always. In most cases where no sequestering agent has ever been used, there will be rust flakes in the machinery itself. The first few cycles of operation will tend to loosen rust and cause deposition of particles on the goods. This condition will clear up in a short time, or it may be prevented by careful cleaning of pipelines, valves, and machines.

5. Won't ordinary water softeners do as well?

For the removal of calcium and magnesium, yes, but for the heavy-metal ions, no. Water softening is highly recommended and in modern plants is a necessity. Most of the offensive ions are brought into the plant along with materials and must be dealt with specifically.

6. What are some of the tested benefits in specific processes?

Kier-boiling cotton—Samples of kier-boiled cotton were taken from regular production and from a run that contained the proper sequestering agent. When reduced to ash, the regular run contained 3,241 parts per million, the test run 605 parts. In kier boiling, mercerizing, batch or continuous bleaching, where caustic content is high, iron stains cause yellowing and spotting. Subsequent treatment to remove such stains costs money and time and, incidentally, weakens the cotton.

Bleaching with peroxide—As an additive to peroxide baths, sequestering agents are compatible with silicates. In this operation, reduction of metallic ion concentration tends to reduce the formation of molecular (O_2) oxygen. The life and strength of the peroxide is thus extended. Half as much silicate can be used, with the same effectiveness, with a very low concentration of sequestering agent.

Catalytic decomposition of peroxide causes formation of oxycellulose. By removal of the catalysts (metal ions) in the fibers, you can prevent pin-hole effects.

In chlorine bleaching, iron is a major troublemaker. Sequestering agents work well in hypochlorite and help to give consistently whiter goods.

Boiling-off operations—In normal operations with soap, the formation of insoluble curds is the main problem. Sequestering agents prevent such formations. Throwing oils and softeners often cause curd formations also. When such curds are prevented, goods can be more easily and quickly rinsed and prepared for dyeing.

Wool scouring—The same principles apply.

- Sequestering agents have a short history in textiles. In relatively few years many uses have been found for them
- Bleachers, once they have tried a good sequestering agent, wonder how they ever got along without them
- Pure process water does not preclude the need for sequestering agents
- Most of the impurities that cause trouble are brought into your mill in raw materials—fiber, chemicals, dyes; others develop in machinery by erosion, corrosion, and oxidation

Wool that is free from oil, alkali, and metal ions is much easier to dye. Consistent absorbency and cleanness promote consistent dyeing results.

7. All the talk has been about alkaline treatments. Do sequestering agents have any use in the dyehouse?

Definitely. Let's pinpoint a few.

Vat dyeing—It's a well-known fact that leuco vats are sensitive to hardness. Metallic ions tie up the dyestuff molecules and prevent proper combination of dye with fiber. A color yield 10 to 20% heavier may be expected, along with brighter shades and more consistent results, if sequestering agents are used.

Naphthol dyeings—A little sequestering agent added at each stage—preparation, dyeing, coupling, and scouring—will help to improve brightness and color yield. Perhaps the greatest benefit here, though, is improvement of crockfastness.

Directs and developed dyeing—No general statement can be made. Some directs are not benefited, because of the solubilizing effect of sequestering compounds. Some, perhaps most, of the directs show a marked improvement in depth and evenness. It would be best to try a sample formula with a sequestering agent before you run it in production.

Where sequestering agents are used for direct dyeings slated for a copper aftertreatment, a good and complete rinse is necessary to insure proper coppering.

Acetate dyeings—A generous amount of soap is generally used to help suspend dispersed acetate dyes and to lubricate the yarns during the dyeing. Hardness due to the presence of metallic ions causes precipitation of insoluble soaps. These soaps entrap dyestuffs and result in loss of color yield. Use of sequestering agents prevents this loss and aids in level dyeing.

Sulfur dyeings—Sequestering agents definitely aid distribution of color throughout the stock and thus reduce shade variations within the batch. Bronzing, caused by hard brine precipitating the color, is prevented. Less expensive non-copper-free colors can be used because copper is sequestered. Reduced amounts of surface-active agents can be used.

8. How about wool dyeing?

Wool dyes, particularly chrome colors, are sensitive to foreign metal ions. Improvement in yield, evenness, and brightness of colors is evident when a sequestering agent is used. A little extra acid is needed, however, because pH is slightly higher.

9. Do sequestering agents aid in stripping?

Yes. They help to prevent contamination of the bath caused by the corrosive action of stripping agents on the machinery. More-even stripping action is the result. The stripping of metal-complex colors (aftertreated directs) is much easier if the copper ions are sequestered out before redyeing. When resin-treated goods are stripped, the sequestering agent should be added in the acid bath used to "break" the resin.

10. I am led to believe that sequestering agents are a cure-all. Is this true?

No. Undoubtedly many uses exist that have not yet been explored. Use of sequestering agents will not prevent many errors and troubles caused by mechanical failures; but everything else considered, they can make your operation easier, cheaper, and more uniform.

5 ELECTRICAL PROBLEMS and How To Solve Them

▶ Grounds, the most important problem, can be kept in control better if ground indicators and ground locators are used

▶ The other problem areas—loose connections, switches and starters, motors, and cables—can all be minimized by following some careful maintenance procedures

By TITUS O. SILLS, Engineer, Cannon Mills Co.

A 5-YR. STUDY OF 14 MILLS has pinpointed the main electrical problems in textile mills.

PROBLEM No. 1

Grounds—The Greatest Problem—Can Be Traced to Four Causes

The causes of electrical grounds are:

a. The breakdown of insulation caused by age or natural deterioration

b. Improperly insulated connections made hastily or carelessly

c. A combination of aged insulation and high humidity in areas where moisture condenses in the conduit and fitting and causes a breakdown of the insulation

d. The breakdown of insulation caused by vibrations or mechanical injury, especially in weave rooms

In high-humidity areas where a lot of grounds occur, the number of grounds has been substantially reduced by sealing all conduits that pass through the floor or walls into a cooler atmosphere. These conduits are sealed with a regular sealing compound at the terminal points inside the warm, humid room. A patented sealing bushing is currently being used on the ends of the conduits to seal them.

These methods do not entirely eliminate condensation, but they greatly reduce it.

Condensation can also be reduced if conduits are installed in the floor instead of under the floor. When this method is used, the conduits remain in the same atmosphere all the time; and, in most cases, condensation is completely eliminated.

Ground indicators are being used in almost all the switch rooms of the plants contacted. These indicators show if there is a ground on the wiring system, but they do not locate the cause. Most grounds are found through the process of elimination, which is inaccurate and slow.

If grounds aren't readily located, many machines are usually shut down; and if it becomes necessary to locate the ground immediately, much production is lost. If the location of a ground isn't too urgent, it is usually put off until the week-end shutdown.

A ground locator, which can be connected into a wiring system, while the system is in operation, is being used successfully in two of the plants contacted. This detector sends a signal over the system to the direct point of error. Since the ground is indicated immediately, repairs can be made at once instead of waiting until the week end. Fire risks are consequently eliminated.

A study of the results from the detectors in these two plants indicates that considerable savings can be realized when they are used.

Based on a paper presented at a recent meeting of the Textile Subcommittee, American Institute of Electrical Engineers.

PROBLEM No. 2

Loose Connections Helped By Use of Torque Wrenches

Loose connections are caused by the carelessness of electricians or by a lack of skill in making connections.

Soldered joints usually come loose because the connections aren't soldered correctly. When solderless connections are used, loose connections are generally caused by the carelessness of the electrician in tightening the device. Most loose connections develop on main-line terminals carrying high current.

Compression-type terminals and connectors have almost completely eliminated the loose-connection problem on small conductors.

An improvement in loose connections on all types of terminals is realized when torque wrenches are used to tighten connections. If torque wrenches are used under the close supervision of an instructor, uniformly tight joints are assured. After an electrician is given instructions in the use of torque wrenches, he knows specifically how tight each type of nut and screw should be drawn.

Torque wrenches are not being universally used in the plants contacted in this study, but their use is becoming standard practice.

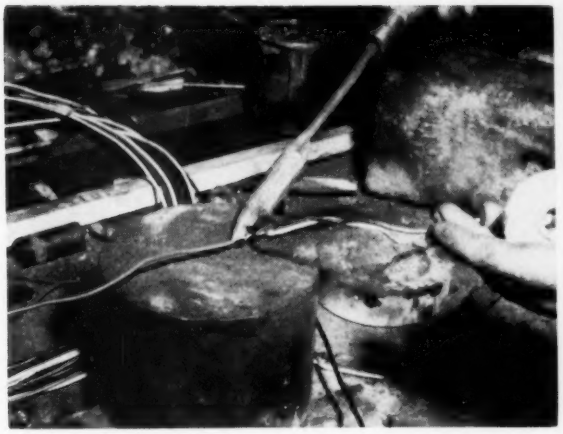
PROBLEM No. 3

Switches and Starters Require Periodic Cleaning and Inspection

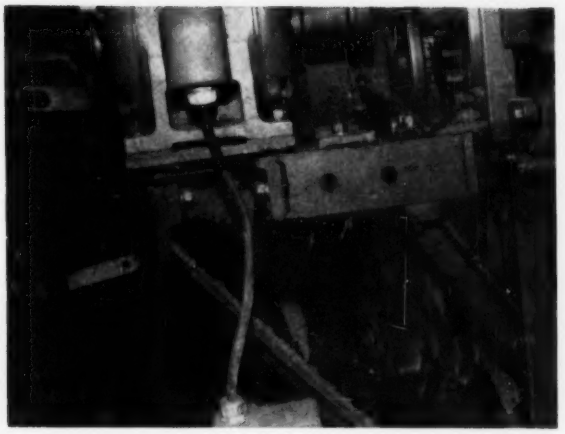
By setting up routine periodic cleaning and inspection schedules you can eliminate arc-overs or flash-overs that cause grounds. Switches and starters must be cleaned frequently to remove foreign matter such as dust and lint.

Portable vacuum cleaners in addition to compressed air are being used in one plant to clean the interior of the switches and starters. This equipment has been used for only a short time and, therefore, its effectiveness has not been definitely established.

General-purpose enclosures are commonly used in the



SOLDERING helps to relieve the problem of loose connections. Solderless connections should be tightened with a torque wrench.



FLEXIBLE CORD, of the nonmetallic type with an oil-resistant sheath, helps to eliminate the problem of flexible connections.

plants contacted and, although NEMA Type 1A enclosures are now being used in normal replacement, many general-purpose enclosures will remain in use and continue to be a problem for many years.

The contacts and working mechanisms of the starters and switches are inspected regularly to see that they are kept in good operating condition.

PROBLEM No. 4

Motor Maintenance Is a Matter Of Cleaning and Lubrication

Cleaning, lubrication, and maintenance of motors is a problem on old-type motors, but the screenless, self-cleaning textile-type motors equipped with ball bearings have greatly simplified the problem. However, there are thousands of general-purpose, sleeve-bearing, waste-packed, and ring-oiled motors that remain a problem.

Scheduled cleaning and lubrication programs along with periodic checks on air-gap clearances and insulation and ground tests keep motors in good mechanical condition and reduce the number of motor breakdowns in production.

One mill has been set up as a pilot unit to work out methods of cleaning and lubricating motors. The schedule is broken down so minutely that the maintenance man knows exactly what he is to do each hour, day, week, or month. Although some of the operations are repeated frequently, the schedule is set up on a 50-wk. basis.

From all indications to date, this system of motor maintenance is completely satisfactory and will soon be adopted in other mills.

In 1947 a motor-record system was installed in one plant containing 1,888 motors totaling 6,536 hp. The record system was started to determine such things as: How much money can be spent to prevent a bearing failure or a winding failure? What causes bearing failures? What causes winding burn-outs? How can the cost of maintaining motors be reduced?

After five years of collecting data, the engineering department of the plant is working out the answers to some of the questions concerning the motors. For instance, the windings of 2.34% of the motors are being replaced each year. (The windings of 2.75% of the installed horsepower are being replaced each year.)

It has also been determined that 2.18% of the motor bearings are being replaced each year. (The bearings of 3.6% of the installed horsepower are being replaced each year.)

Many of the causes of these losses have been determined, and work is now being done on ways to reduce the losses by eliminating the causes. Definite maintenance costs are also being tabulated.

PROBLEM No. 5

Cable Trouble Is Helped By Nonmetallic Flexible Cord

Flexible connections from starters to motors on machines that require frequent motor adjustments have been an annoying problem to maintenance men. The flexible joints and ends of metallic conduit continually pull loose and expose the conductors. When the conductors pull loose, fire hazards are created.

In the plants contacted to study flexible cables, labor costs have been high because electricians have had to work each week end repairing loose connections.

Approximately 5 yr. ago, five of the plants contacted began using three-conductor (with ground) nonmetallic flexible cord with an oil-resistant sheath of the mine-cable type. Since this flexible cord has been used, the flexible-connection problem has been almost completely eliminated in these five plants.

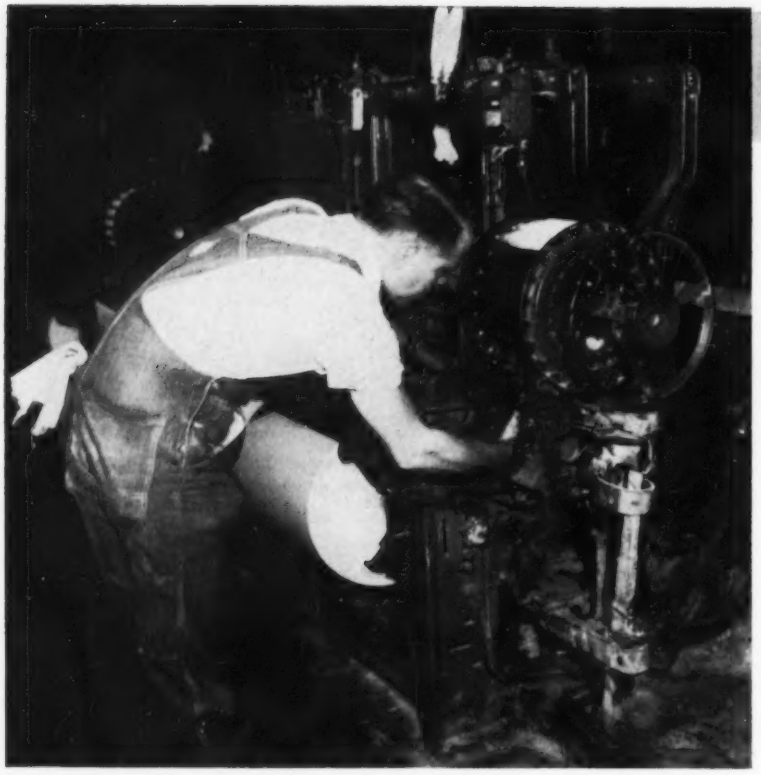
Now 14 of the plants contacted are using flexible cord. The cord is ideal in every way except that the rubber insulation on the individual conductors breaks down inside the motors through overlubrication. This problem can be eliminated by applying the correct amount of grease to the motor bearings and by insulating the conductors with an oil-resistant material.

There's A Sixth Problem, Too

The five problems discussed in this article cover most of the troubles encountered in textile plants, but there's a related personnel problem that is far greater than the five mechanical problems.

There just aren't enough trained electricians who study and take pride in their work. The mechanical problems can never be eliminated until electricians are properly trained in installation and maintenance practice.

Here's the Way



THE LOOMFIXER checks the ringing up of the bobbin often to prevent filling breaks on the transfer.

THE BATTERYHAND carefully places the filling on the thread guide and applies just the right tension to the ends.

▶ Loom-stoppage checks made by the laboratories of several leading weaving mills show that more loom stops are caused by broken filling on the transfer than by any other cause. Often, transfer breaks account for more than 50% of all loom stops. ▶ Have your loomfixers check and set a few looms by these specifications, and you'll see how easy it is to eliminate broken filling.

By RICHARD B. PRESSLEY
Assistant Editor, TEXTILE WORLD

THE PROBLEM of transferring filling from a battery or magazine on the automatic loom of today is not a problem of worn loom parts; it's a problem of setting the loom parts in correlation to each other, whether they're old or new.

Several steps are necessary in checking a loom to stop broken filling on the transfer.

Set the Battery or Magazine In Line With the Shuttle

The bobbin that is being transferred must be placed in the shuttle parallel to the shuttle walls and in the center of the shuttle, and the bobbin tip must be in line with the shuttle eye.

To set the loom for this condition:

1. Set the distance from the reed line to the inside of the breastbeam with the lay at the front-center position. Both ends are set to a gauge.

Remove all lost motion from the crankarms. (It is assumed that the lay is the right height and that the battery or magazine is the right distance from the lay sword because these positions are seldom disturbed.)

2. Set the hopper stand on the battery, and position the magazine with gauges so that the magazine or battery is set over the center of the lay-end plate.

3. Center the shuttle to the lay-end plate. Set the box front so that the shuttle spur is in the center of the lay-end plate, and then set the binder to the shuttle.

4. Set the transfer hammer to the bobbin in the battery or magazine, and follow through the transferring motion until the hammer is in line with the bobbin in the shuttle.

To Stop Transfer FILLING BREAKS

Be sure that the hammer drives the bobbin all the way in the shuttle but does not press the bobbin too far down. If the hammer still moves after it hits the adjusting-screw stop, the filling will be broken.

Box the Shuttles To the Transfer Hammer

The most common causes of broken filling at the transfer are rebounding shuttles and shuttles that drive up too far in the shuttle boxes.

If a shuttle rebounds or does not drive up because of a weak pick, the transferred bobbin will be gripped too far away from the butt of the shuttle; and, consequently, the tip of the quill will be too close to the shuttle eye and will break the filling.

To correct this condition:

1. Check the picking motion for too much power, which will cause rebounding shuttles.

2. Raise the pick arm or the power strap.

3. Reset the binder and checkstrap to check the shuttle correctly.

When a shuttle is driving too deep in the shuttle box, the bobbin butt strikes the top of the cam surface of the shuttle grip, and the tip of the bobbin breaks the filling.

Shuttles drive too deep because the picker or lay-end packing is worn on the drive end. If the picker isn't worn out completely, there's no reason to change it. Increase the thickness of the lay-end packing on Draper looms, and adjust the bumper or add packing to the bumper on Crompton & Knowles looms.

Check the ringing up of the filling on the transfer. Set the shuttle to the transfer hammer so that the rings in the bobbin that is being transferred are one ring back of the rings of the exhausted bobbin in the shuttle.

To set the shuttle to this condition you may have to correct faults in the picking motion and match and weigh shuttles on Crompton & Knowles looms, but don't be satisfied until your transferred bobbin rings up correctly.

Set the shuttle feeler to the shuttle with the shuttle fully boxed. A close setting ($\frac{1}{8}$ in.) is ideal to prevent breaks at the transfer.

Adjust the Thread Guide To the Shuttle

If the shuttle eye is to thread up every time, the filling end must be in line with the shuttle eye.

It's easy to keep the thread guide adjusted on Draper looms because there's only one adjustment after the hopper stand is positioned. Move the thread guide forward on the bobbin disk until the filling end is to the front of the bobbin in the battery.

The vibration-type filling-end holder on W looms and C looms has several adjustments:

1. With the lay at the front-center position, move the supporting arm of the filling-end holder forward or backward until the filling end is in the center of the clearance between the magazine-giveway latches.

2. While the lay is still in this position, move the filling-end arm up or down to position the filling end vertically in the center of the giveways. The filling end must still be in the center of the clearance between the giveways. With this setting, the filling end clears the top of the lay end by $\frac{1}{4}$ in.

3. Set the rotors to hold the filling firmly. If the rotors aren't set correctly, the ends will be pinched in two or will pull out at the transfer.

4. Looms on concrete floors usually don't vibrate enough to keep the rotors turning. A spring-steel arm with a rubber block attached to the end should be mounted on the lay end to tip the supporting arm of the filling-end holder and keep the rotors turning.

Select the Shuttle That Is Correct for the Filling

Shuttles and shuttle eyes must be selected for the type of loom you have and also for the filling you are running. For example, when staple-rayon suitings with a filament-rayon decorative check are being woven on a C loom, it is often advisable to use shuttle eyes without tension pads on the one, two, or three shuttles that run staple-rayon filling and use tension pads on the shuttle that runs decorative filling.

On both Draper and Crompton & Knowles looms, when you change from one style fabric to another you can often reduce filling breaks by changing from one shuttle eye to another. Coarse filling will run better without tension pads, and it is better to change the eye than to work on shuttles for breaking filling.

Each shuttle manufacturer makes several shuttles for each type of loom, and it's up to you to select the one that's best suited to your looms and fabrics. The position of the groove in the front wall of the shuttle to the box front is important in filling-breaking reduction.

The shuttle size is also important. If the shuttle is too large for the lay ends, it can't be boxed correctly, and filling breaks on the transfer will result. Shuttles that are too small for the outside dimensions of wound bobbins of filling also contribute to filling breakage.

The position of the eye in the shuttle affects filling breakage on the transfer. Try raising the front of the eye with about 0.020 in. of durable paper shims. If this position helps threading-up conditions, have your shuttle manufacturer correct the position of the eye on your next order of shuttles.

Loomfixers and Batteryhands Should Be Made Responsible

Have your loomfixers check every loom twice a week to see that the shuttles are boxing in the correct position to the transfer hammer. At high speeds, pickers, lay-end packing, bumpers, and checkstraps wear rapidly and cause shuttles to box incorrectly for transferring conditions.

Have shuttles checked every two days to see that they're o.k.:

1. Cut down or polish any rough places on the surface of the shuttle.

2. Tighten eye screws and grip and cam screws.

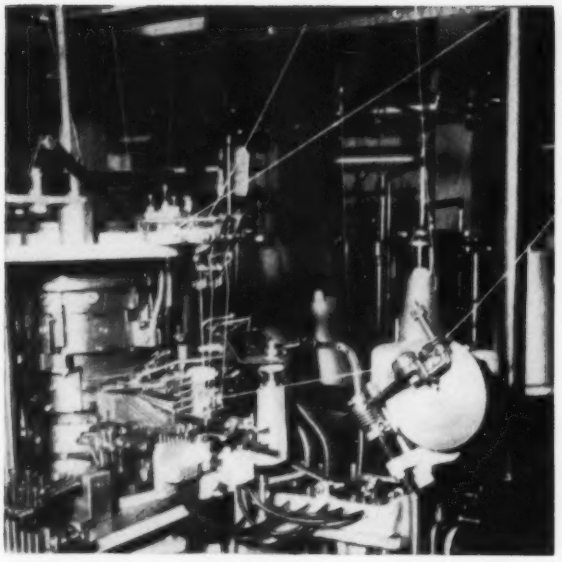
3. Align the bobbin to the shuttle walls with a steel dummy bobbin. Worn grooves in the grip will throw the bobbin out of alignment. Grips that are weakened from wear also let the bobbins vibrate out of alignment when the loom is running.

4. Align the steel-bobbin tip to the shuttle eye with a depth gauge. Set the bobbin tip $\frac{1}{64}$ in. above the center line of the shuttle on fine filling and not more than $\frac{3}{64}$ in. above the center line on coarse filling.

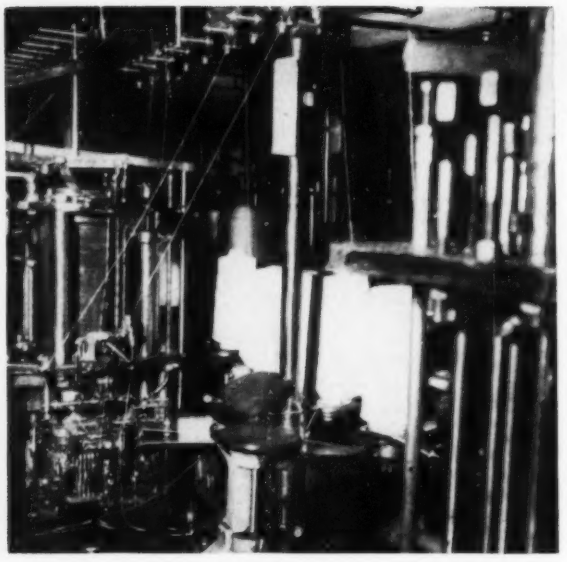
5. If you're using shuttle fur, don't cut the fur too short. Filling threads up better on the transfer when the ends of the fur on each side of the shuttle meet in the center of the shuttle.

Batteryhands can prevent broken filling at the transfer if they:

(*Continued on page 204*)



STITCH CAMS are pulled down to knit a very slack stitch.



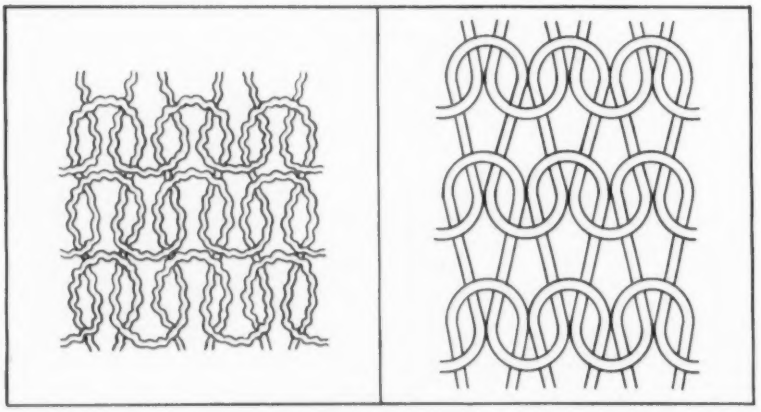
AS LITTLE TENSION as possible is put on the yarn.

Seven Points To Watch When You Knit CRINKLED NYLON

▶ Penmans Ltd., Paris, Ont., has been knitting Duplan's new Helanca nylon yarn for several months and has come up with the following tips:

• Use finer yarns • Keep the stitch slack • Minimize drafts • Use little tension
• Loop immediately • Steam after looping • Preboard on small forms

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD



WHEN RELAXED, the yarn in the loops is crinkled.

WHEN STRETCHED, the yarn loses its crinkles and allows the loops to expand.

EXPERIENCE AT PENMANS LTD., Paris, Ont., indicates that certain precautions are necessary in processing Helanca yarn:

1. Finer yarns than usual are required. The best results are obtained when the gauge is filled to approximately half.

Suitable yarns are:

Machine	Denier of leg yarn	Denier of heel and toe yarn
200x3¼ Komet	2/70	2/70
150x4 Komet	2/2/70	3/2/70

When coarser yarns are used, the fabric is too stiff and has little elasticity.

2. Lower the stitch-cam block to give a very slack stitch.

3. Place as little tension as possible on the yarn. Reduce tension devices to a minimum, and regulate them to give their lowest tension.

4. Avoid air currents through the knitting room because they tend to blow the crinkled coils off the cone and cause the yarn to get out of control.

5. Loop as soon as possible after knitting. When the socks come off the machine they are very long, but they soon begin to contract. No special troubles have been encountered during looping, although special care must be given to the setting of the looper-knife tensions. The top knife should be set to just touch the bottom knife but not ride it.

6. Steam the socks for 10 min. at 240° F. after looping. Steaming brings the socks down to their natural size.

7. Preboard at 240° F. Use a small form. For example, size 10½ socks are preboarded on a size 9½ form.

After dyeing and extracting, board to normal size.

Dyeing of Helanca yarns is best done at 170 to 190° F. for 20 to 30 min. Acetate colors are used. Helanca yarns tend to dye more slowly and take lighter shades than other nylon yarns.

Bleaching is not recommended.

Why Use Crinkled Nylon?

The normal plain or jersey-knitted construction has fair elasticity in both directions. Rib fabrics have very good elasticity in a horizontal direction, but vertically they have no more than plain fabrics.

The use of Helanca yarn allows hosiery to stretch in a vertical direction, or from toe to heel.

When the fabric has no tension on it, the yarn in the loops is crinkled. When a force is applied to the sock, the crinkles disappear and the loop expands in the direction of the force. When the force is released, the yarn once again takes up its crinkled state. If there is some obstruction such as a toe, the loop only contracts as far as the obstruction.

What Penmans Makes

Penmans is knitting men's socks from Duplan Helanca yarn in three sizes—small, medium, and large—on Bentley Komet LL and BR machines. Children's socks made from the same yarn are to be put on the market soon. It is expected that the children's socks will prove even more successful than the men's socks because the small socks readily expand to conform to the shape of the foot as the child grows.

How To Improve Winding Of YARN-GRADING Boards

► **Replacing hand turning with an electric motor and substituting gears for the former traversing arrangement improve yarn boards considerably**

► **Time: 2 days. Parts cost: $15.00 (not including motor and gear reducer)**

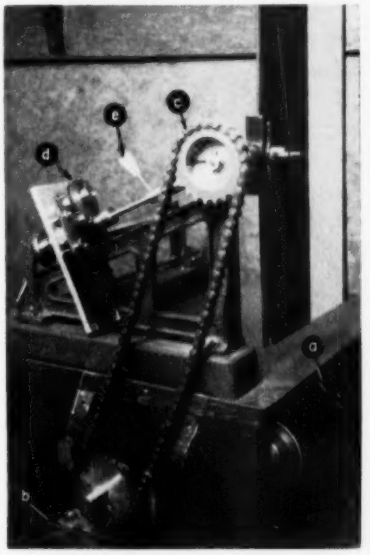
By EUGENE F. WALLACE, Southern Regional Research Laboratory*

ALTHOUGH A NUMBER of mechanical and electronic instruments have been developed recently for measuring the physical properties of textiles, none is available for determining yarn grades. Cotton-yarn grades are still gauged by visual comparison with ASTM Yarn Appearance Standards, made up of a set of 20 5½x10-in. photographs representing the variations in five groups of specified yarn numbers. Yarn is prepared for grading by winding on 9x15-in. black boards with a Suter Yarn Evenness Controller†.

We found that considerable variability existed in the appearance of yarn boards that should have been identical in all respects. The trouble was found to be twofold: nonuniform tensions caused by varying winding speeds, and nonuniform lay caused by the friction-type traversing mechanism.

To improve the operation of the winder, hand turning of the winding crank was replaced by a power-driven turning arrangement. The arrangement consists of a fractional-horsepower electric motor, a small 16:1 gear reducer, and appropriate V-belt and chain drives to provide a rotational speed of the yarn board of 120 rpm. Anywhere from 100 to 120 rpm. is satisfactory. Manual operation was found to give speeds ranging from 50 to 150 rpm.; a careless operator may vary almost this much while winding the same board.

The traverse friction disk and flat-pulley device were replaced with a change-gear setup that fits in the same space and provides positive and uniform traverse of the yarn guide of 16, 20, 26, 38, and 48 ends per in. in accordance with ASTM requirements for the particular yarn number being wound.



MODIFIED WINDER, with safety guards removed, shows: *a* motor, *b* gear reducer, *c* chain drive to winding board, *d* change-gear drive to traverse screw, and *e* yarn guide on traverse screw.

Engineering details of this modification are available from the Southern Regional Research Laboratory, 2100 Robert E. Lee Blvd., New Orleans 19, La.

These modifications require about two days to make and cost about $15 for parts, exclusive of the motor and gear reducer. A worm and gear could be substituted for the gear reducer. Inexpensive Boston gears† are used for change gears. The machine work is simple and consists largely of a mounting plate and stub shafts for the gears.

Results have been worthwhile. The uniformly wound yarn boards have eliminated the need for manual "touching up" to obtain the required yarn spacing and have enabled more rapid and accurate evaluations of yarn grades.

---

* *One of the laboratories of the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Dept. of Agriculture.*

† *The mention of trade products does not imply their endorsement by the Dept. of Agriculture over similar products.*

Make a HEAT SURVEY To Stop Hidden Losses

▶ Here is an outline that points out sources of steam and heat losses and gives suggestions for their correction. All phases of textile operation are covered, from space heating to processing. The emphasis is on old-plant improvements rather than new-plant upkeep.

By LEO WALTER

THE BEST WAY TO ACHIEVE fuel and heat economy is to make a heat survey. Many hidden losses can be detected. Improvements will usually pay for themselves out of fuel savings and improved quality within one to five years. The following plan can be used to make a steam survey.

Plant Engineering

An overtemperature of 1° F. can waste 5% of the fuel bill for space heating.

The questions to be answered are: Is the heating system the most suitable one? If not, what should preferably replace it? Accelerated hot water with weather control? A new air-conditioning system? Or high-temperature hot-water heaters that use boiler water under full pressure?

Is the existing steam-heating system laid out to allow efficient steam trapping or air venting? For example, the layout of unit heaters can be improved by using a ring steam main. Good steam trapping in combination with room thermostats has often produced considerable steam savings.

Inadequate insulation of hot-water storage tanks with a hand-controlled steam supply is another cause of waste steam. Thermostatic steam-and-water mixers can produce the exact amount of hot water without using storage.

Washing, Bleaching, Dyeing

There is bound to be waste of steam if the steam input is hand controlled. Size becks, size boxes, heaters of bleaching kiers, and dye jigs must be thermostatically controlled. The shorter the heating-up period, the smaller the heat losses from radiation. These heat losses are considerable if the loss from a single process vessel is multiplied by the total vessels in the mill.

Check live-steam sources to see if exhaust or pass-out steam from engines or turbines could replace them.

Wider use of alarm contact thermometers is an obvious but seldom-applied means of indicating a desired liquor temperature. Alarm thermometers and hoods should be standard for rows of dye vats.

Dryers, Slashers, Tenters

On equipment using hot air, make sure that condensate is properly drained and steam input controlled. Dryers can waste much steam from unlagged housing surfaces, during idle periods, or from underloading. Check these points. Measurement of the exhaust-air temperature will show if the hot air has given up sufficient heat.

Can dryers, slasher cylinders, and hot platen presses should be uniformly loaded. Insulating the ends of slasher cylinders produces considerable steam savings. So does proper steam trapping and air venting. Surface pyrometers for can dryers are recommended. Each material has one cylinder temperature that is best, and temperatures that are too high reduce quality and waste steam.

Recover Waste Heat

Diesel exhaust gases can boost jacket-cooling water temperature, and this hot water can be used for processing. Boiler flue gases can heat hot water or hot air for processing. In large power plants, back pressure or pass-out steam is used for boiler feed-water preheating. It might be economical to install a platen or multitube air heater to recover wasted heat in flue gases and heat dry air with it.

Hot condensate from steam-heating coils and flash steam from steam traps have possibilities for saving heat and fuel. Flash-steam recovery will save live steam if steam is used in high-pressure and low-pressure stages.

Low-pressure exhaust steam can be used in place of live steam. This system might involve reconstruction of steam-heating coils in finishing machines: a larger heating surface might be necessary. The same idea applies to converting process-steam heating to high-temperature hot-water heating, which has a closed heat-flow current.

Find out if sequence heating is applicable. For example, exhaust air from dryers or tenters can be used for predrying air in a hot-air dryer. It might be possible to use heat from hot condensate for warming fresh water in a heat-exchanger.

Check for Controllability

Controllability of a finishing process is not

always considered when a new piece of plant equipment using steam, hot water, gas, or electricity is ordered. Good controllability of heat-flow processes, such as washing, scouring, bleaching, dyeing, or drying, saves steam and fuel with less elaborate and lower-priced controlling equipment.

Controllability has nothing to do with the question of output or equipment design in a broader sense, although efficiency and controllability of plant equipment go hand in hand. A hot-water storage tank with steam coils might hold the required water volume, but the hot-water-temperature control might not be as good as desired because controllability was neglected when the heating coils were sized and located. Also, a process vessel heated by steam coils can be designed with low controllability, although it fulfills other requirements. Another example is a hot-air dryer that is less elastic to heat-load changes than is desirable for automatic temperature and humidity control.

Wherever a heat-flow process proves to be difficult to control by hand, the first step before fitting automatic control instruments is to investigate controllability. Steam and fuel economy will be achieved by using the right control method.

Reduce Peak Loads

Conditions in many plants produce steam starvation at certain periods. The boiler load is at times bigger than it should be, and the steam pressure drops and delays the heating of liquids or drying. The obvious remedy is to install a larger boiler or a steam accumulator, but the cost is sometimes embarrassingly high, especially when other less costly remedies are available.

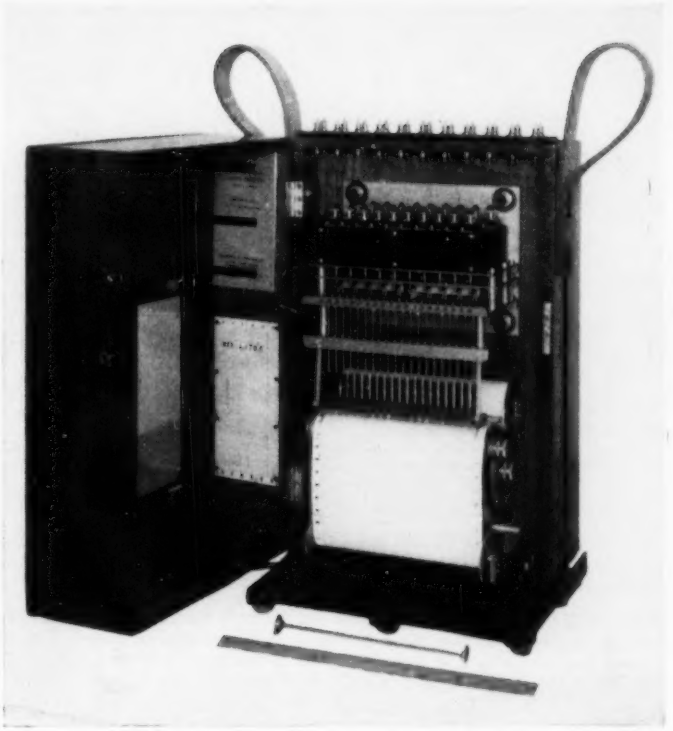
There are alternative remedies worthy of investigation. Reduction of peak-load demands can be achieved by reducing steam consumption in general. New boiler accessories can transform a boiler into a steam accumulator at reasonable cost. If steam consumption per unit of output is reduced, boiler peak loads can be reduced. By eliminating outdated steam-heat equipment in the finishing department, you can increase production and cut out excessive steam consumption.

The best-designed plant can be spoiled by running it haphazardly for output under manual control. For example, unnecessary stoppages of continuous hot-air dryers not only add to consumption of steam but also produce reduced dryer controllability and affect quality. Peak loads of steam can cause steam starvation that increases fluctuations of the boiler load and reduces boiler efficiency.

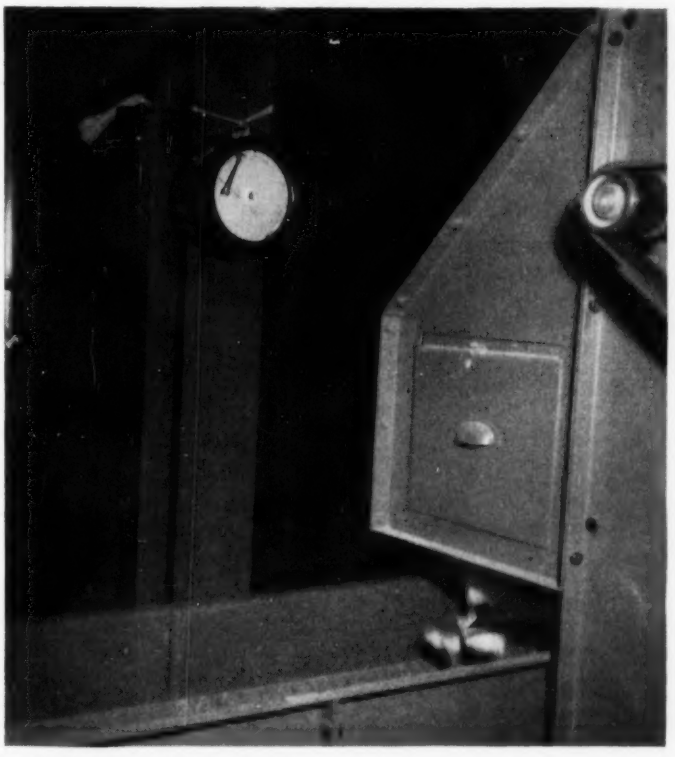
The remedy may be to control heat demand by staggering the heat load of the processing machines in conjunction with automatic steam control of each machine. This improvement will maintain output at reduced steam and fuel consumption and improve the quality of the product. A close survey of controllability in a finishing plant will often disclose ways of saving heat and fuel.

The quickest indications of inefficiency in finishing are overtemperatures or undertempera-

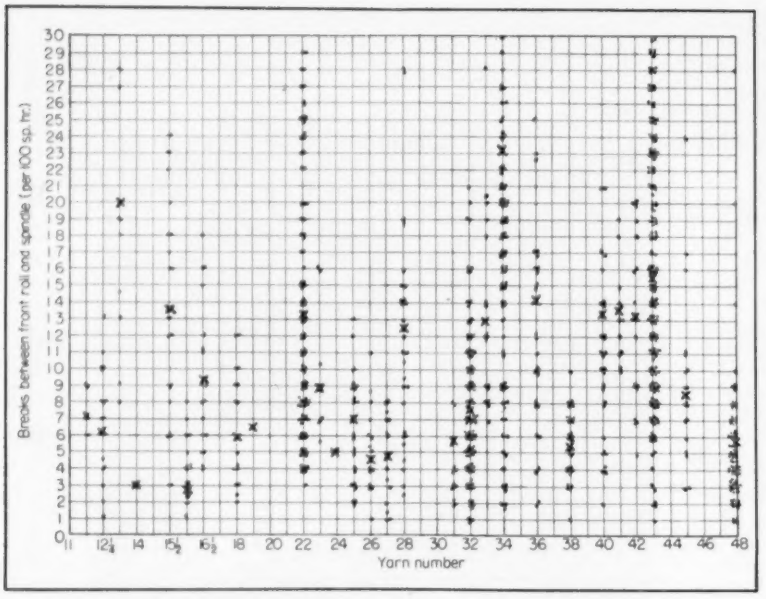
(*Continued on page 194*)



THIS MULTIPEN RECORDER is used to run tests on dryers to determine idle periods. Steam consumption during idle periods can be as large as during running time. Steam can be saved by reducing these idle times.



PORTABLE HUMIDITY RECORDERS are finding increased use because of their versatility. Spot checks with an instrument like this can be more meaningful than sling-psychrometer checks.



CATEGORIES from the analysis sheet that prove to be in the same grouping are plotted on a graph for isolated study. Each dot is the average of many individual observations, and each X is the average of the dots. A composite graph of this graph and the graphs of other break areas clearly shows that the area shown above is the major break area.

Summary of Sample Study

Type of Break	Percentage of Total Breaks
Roller lap	
Top roll	18.3
Bottom roll	36.5
At pigtail	6.0
Tangled ends	8.7
Nonpieced rovings	2.4
Roving run out	20.3
Faulty roving (slub)	1.2
Ripped bobbin	0.7
Startup after doff	3.6
Break at large dia. of bobbin	0.7
Broken traveler	0.4
Broken band	0.4
Run off side of roll	0.8
Total	100.00

ENDS-DOWN CAUSES are broken down into as much detail as possible for analysis. This summary from the analysis sheet represents hundreds of observations with different yarn numbers, qualities, travelers, and turns per inch. The analysis sheet shows the individual figures for each yarn study for detailed analysis. The summary points out some obvious mechanical defects.

ENDS-DOWN STUDIES Pinpoint Worsted Spinning Troubles

▶ If you know why ends come down, you can locate the source of machine trouble or recognize the trouble as a bad blend. Here is a simple study that can serve as a general guide to the breakdown and analysis of ends-down data.

By M. J. KOROSKYS, Assistant Professor, Wool Department, Lowell Textile Institute

ENDS-DOWN STUDIES provide data that can be used to improve the efficiency and quality of worsted spinning. Broken down into detail, the data reveal sources of breakage and the percentage contribution of each source. The cost of bringing sources of excessive breakage into line can be weighed against the expected increase in efficiency. Here is a sample study that can be used as a general guide to the breakdown of elements and the interpretation of the data.

Use Analysis Sheet and Graphs

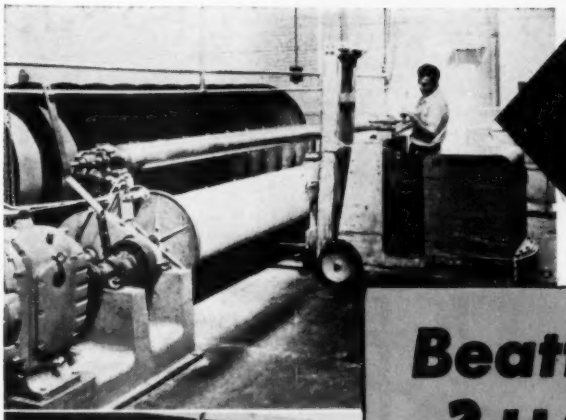
Ends-down data are the result of hundreds of individual observational studies. The results of the observations in this study were compiled on an analysis sheet by yarn number, quality, turns per inch, and traveler against the sources of breakage. These sources of breakage should be broken down into as many categories as possible. Large and general groupings create doubt when you try to translate the data into specific corrections of spinning troubles. This procedure will seem like more work in the beginning, but it will prove easier in the long run.

After the analysis sheet was studied in detail, specific parts of the sheet were summarized on graph paper. The breaks were compiled into three categories to determine the breaks per 100 spindles per hour, and where and why they occurred.

The three categories selected were "breaks between supply and front roll," "breaks between front roll and spindle," and "roving not pieced up in drawing." Separate graphs of the three categories were plotted for clarity and study; then a composite was plotted to show the relative importance of the categories. The graphs show that the major break area is between the front roll and the spindle and that the other two categories are minor.

The analysis sheet is the result of hundreds of ends-down studies; the graphs are pictorial summaries of specific parts of the analysis sheet. For instance, the analysis sheet shows breaks for a particular stock using different travelers; the plot on the graph would be for a selected traveler. Several categories on the analysis sheet,

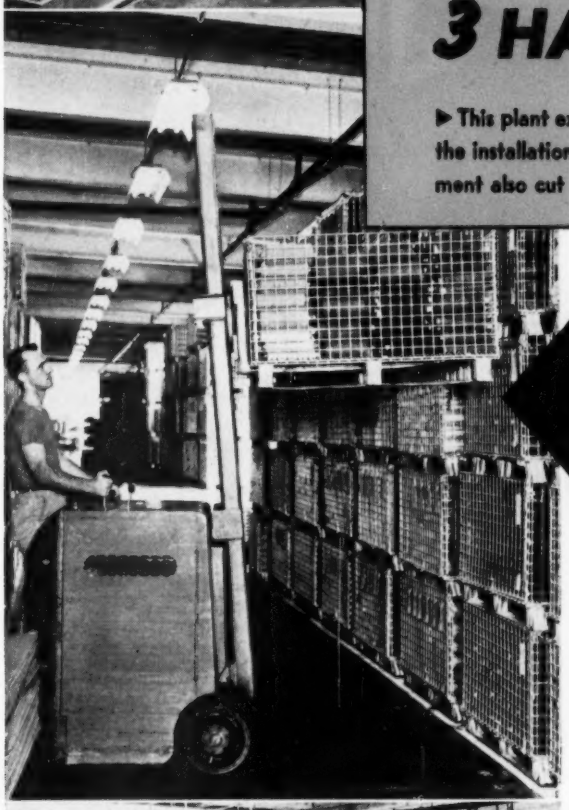
(*Continued on page 290*)



1 WOOL BEAMS are removed from the warper by an electric truck. The truck has a capacity of 3,000 lb. and handles the 1,300-lb., 9-ft. beams or 2,200 lb., 12-ft. beams with ease. The beams are transported to the storage room. The company says the job is done smoothly, quickly, and with a minimum of damage.

Beattie Benefits From 3 HANDLING IDEAS

▶ This plant expected to get materials-handling improvements with the installation of trucks and wire-mesh baskets. But the new equipment also cut inventory manpower 65% and inventory time 88%.

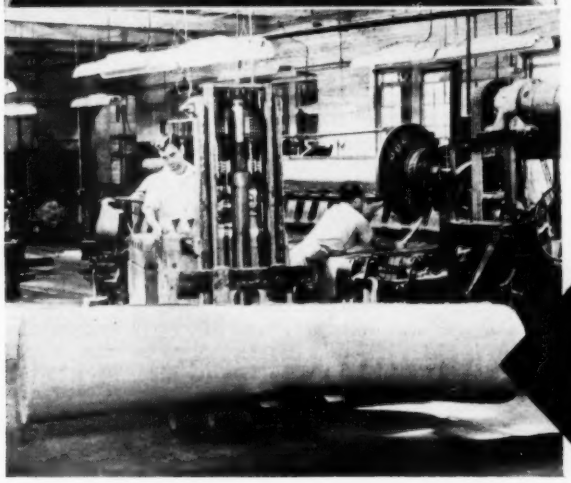


2 BASKETS OF YARN are stacked five high in the conditioning room. The wire-mesh baskets replaced canvas baskets that had a capacity of 50 lb. The new baskets hold over 500 lb. The spools are stacked in the baskets at the winders. The loaded truck is weighed, and an allowance is made to determine yarn weight.

BEATTIE MFG. CO., Little Falls, N. J., improved its materials-handling system with gasoline trucks on the outside and electric trucks on the inside. Heavy wire pallets with built-on baskets replaced the canvas baskets formerly used.

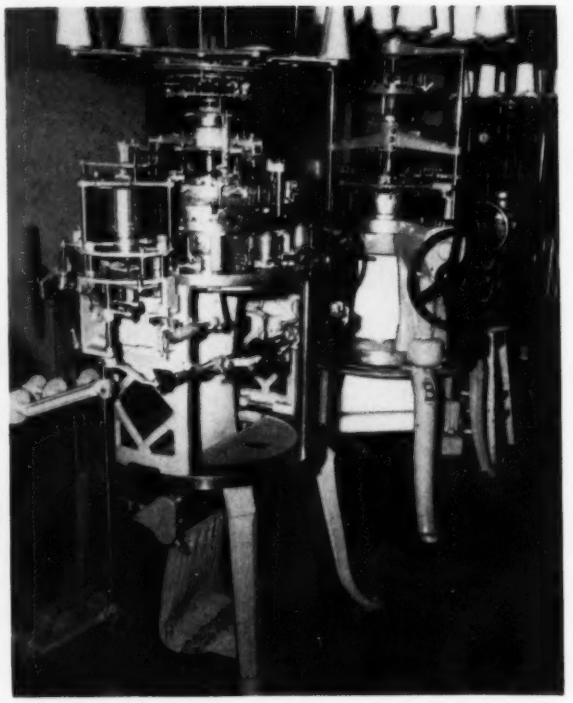
The improvements in plant operations were expected, but the new equipment provided an unexpected bonus. Inventory-taking was reduced from 15 people working for a week to 6 people working one week end. With the wire-mesh containers, only the partially loaded containers are weighed. The weights of fully loaded baskets are already known. Before, the yarn was removed from bins, weighed, and then put back in the bins.

Also, identification of colors, lots, and types of yarn has been improved. There is now no dirt, lint, or old marking tags in the containers. Production schedules have benefited because the quantity of any particular color needed for a production run can be determined quickly and surely.



3 CARPET ROLLS are transported from the looms to the storage room, and from the storage room to the finishing department, with battery trucks. The plant uses several kinds of trucks for the various transporting and stacking jobs. Manpower in storage-area operations was cut 75%. Gasoline trucks are used outside.

INTERLOCK MACHINES produce only one course per two feeds. Be sure to account for this in your calculations of production and efficiency.



BODY-MACHINE efficiency is best calculated in dozens. From the machine rpm. and the number of courses in the garment you can find the 100% theoretical output.

Are Your Circular KNITTING Machines Giving Their Best Performance?

▶ If the efficiency of your machines drops below 80%, you should find out why

▶ Here are some tips on how to calculate efficiency and what to look for to increase efficiency

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

Production on circular knitting machines depends upon—

1. Machine speed
2. Number of feeds
3. Length of stitch
4. The number of wales or needles
5. Yarn number

1. Machine Speed

Formulas have been worked out to determine suitable speeds for all diameters of circular machines. These formulas are based on safe needle velocity.

A latch-needle jersey or rib machine may be rotated to give a needle velocity of 180 ft. per min.

Therefore, $180 \times 12 \div 3.1416 = 688$ rpm. for 1-in.-dia. latch-needle machines.

To find a suitable speed for an 18-in. machine, use 688 as a constant.

For example, $\frac{688}{18} = 38$ rpm.

Loopwheel machines (Tompkins, Crane) can be rotated faster than latch-needle machines of the same diameter. Absence of impact of needle butts against cams makes this increase possible. A formula for loopwheel machine speed is:

$$\text{Rpm.} = \frac{1{,}000}{\text{Dia.}}$$

Many variable factors met with in knitting mills can cause a slight increase or decrease in the results gained from the formulas.

Much will depend upon the quality of the yarn that is being run. Higher speeds than those provided by the formulas should be possible with yarns that have been rewound, waxed, combed, plied, and conditioned and are free from slubs and thin places.

Poorly maintained machines will reduce machine speed. A very new machine cannot be run as fast as a machine that has been broken in. Old machines must be run more slowly to give good production. Slipping belts will reduce machine speed.

Coarse-cut machines can be speeded up. Obsolete stop motions cause machines to be run more slowly. High

workloads cut machine speeds. Lack of humidification systems means lower speeds. Speed should be lowered for tuck stitch, welt cloth, and other fancy fabrics.

2. Number of Feeds

As the number of feeds is increased on a circular machine, the cam angles must be made steeper. Steeper cam angles mean lower speeds. In spite of the reduction in speed, a machine with a higher number of feeds gives greater production than a machine with few feeds.

A 64-feed machine can produce 70 yd. of cloth per hour, but a 32-feed machine running 25% faster produces only 44 yd. of the same cloth.

If large-diameter machines are used, the course spiral is not apparent. The wale spiral is eliminated when the yarn is twisted in the direction opposite to that of the machine rotation.

3. Stitch Length

Pulling the stitch cams down or raising the sinker ring means a long stitch and a sleazy fabric. Increased production is obtained by slackening the stitch.

Most mills set fabric quality to conform with the number of courses per inch. The inches knitted per foot of yarn or the length of yarn in each stitch can be used satisfactorily in calculating production.

The length of yarn in each stitch will be dependent not only on the number of courses per inch but also on the gauge of the machine and the yarn number. The yarn number is proportionate to the machine gauge. The average length of a loop in a 20-cut jersey material is 0.14 in. The length of a 10-cut loop is about 0.28 in.

The stitch length is found by unraveling 1 ft. of yarn and counting the kinks in it, or marking 12 in. of yarn above the feed and counting the needles between the marks after turning the machine.

4. Number of Needles

Production in yards is not influenced by removing needles. Diameter and weight of cloth are very much affected by the number of needles that are in operation. Lightweight cloths are produced by removing needles in some systematic manner.

1x1 rib fabrics are almost double the weight of comparable-width jersey cloths. By leaving out needles in the dial and cylinder, you can make lightweight rib cloths without too much sacrifice in width.

Removing alternate needles in a jersey machine will not result in a fabric half as wide as a conventional jersey fabric, because of the longer sinker loops.

While fabrics from fine-cut machines have more wales per inch than coarse-cut fabrics, the weight will not be greater because of the finer yarns used.

5. Yarn Number

Some knitting machines can accommodate a wide range of yarn numbers, but other machines are limited to a few yarn numbers. The yarn number that can be used depends upon the cut or gauge of the machine. Formulas that have been proved in practice can be used to determine a suitable yarn number for all cuts and gauges.

Latch-needle jersey machines
Cotton yarn number = $Cut^2 \div 20$

Latch-needle jersey machines
Worsted yarn number = $Cut^2 \div 12$

Interlock machines
Cotton yarn number = $Cut^2 \div 8.4$

Circular-rib machines
Cotton yarn number = $Cut^2 \div 8$

Loop-wheel machines
Cotton yarn number = $Gauge^2 \div 42$

For example: A 20-cut, latch-needle jersey machine would knit 20s cotton yarn ($20^2 \div 20$). (With adjustments this machine could knit 16s cotton. The fabric made from 16s would be heavier than the fabric made from 20s.)

From the yarn number we can find the number of yards of yarn in 1 lb. of yarn. As 1s cotton has 840 yd. in 1 lb., 20s cotton has 20x840 yd. per lb. 20s worsted has 20x560 yd. per lb.

Calculate Production

When the above data have been assembled, we can calculate the 100% theoretical production from one or a battery of machines. The theoretical production is the amount of cloth that we would obtain from our machine if there were no stoppages. The production can be worked out in yards or pounds. As fabric is easier to weigh than measure, calculations are best done on a weight basis.

$$\text{100\% Production (lb. per shift)} = \frac{FxNxSxRx60x8}{36xYxB}$$

Where F = Feeds in operation
N = Number of needles knitting
S = Length of stitch in inches
R = Rpm.
Y = Yarn number
B = Basic hank length (840 or 560)

The 100% production of a 64-feed machine with 1,760 needles knitting 20s cotton at a speed of 20 rpm., with the length of each stitch set at 0.14 in.,would be, for one shift—

$$\frac{64x1{,}760x0.14x20x60x8}{36x20x840} = 250 \text{ lb.}$$

Work Out Efficiency

The fabric is cut off the machine at the end of the shift to 6 in. below the take-up rollers. Normal procedures are followed during the shift. The operator is told to keep the production separate from other work. At the end of the shift the last roll is cut off.

The total production of the one shift is then weighed. The weight of the actual production is then expressed as a percentage of the 100% theoretical production.

Assuming the actual production from a 64-feed machine is 220 lb., the efficiency is:

$$\frac{220x100}{250} = 88\%$$

This would be considered good production. If 78% efficiency had been recorded, a check should be made.

What To Check

A check on the operator is made by making similar tests on other shifts and other machines. If one operator's machines have a constantly low efficiency and others are high, a work study should be made. The operator's methods are wrong, the workload is too heavy, or the worker is inefficient.

If tests on all machines and shifts constantly show low efficiencies, test runs on different yarns can be made. Rewinding the yarn will increase the efficiency. The additional cost of rewinding may not warrant the increase in efficiency if no less seconds are made.

Efficiency tests at different humidities and with various applications of wax and oil on the yarn give surprising results.

Results of the tests may show that certain machines constantly have a low efficiency. The stop motions should be checked. Stop-motion tensions may need to be increased. Thread guides may need adjusting. Reneedling and overhauling should bring the machine efficiency back to normal.

The percentage obtained from our figures can also be used in production calculations. In the example of the 64-feed machine, we would allow 12% for stoppages from our 100%-production figures.

Form 880—Rev.

Bibb Manufacturing Company
LAP METER REPORT

_____ Mill

Picker No.	Type Machine	Hrs. Since Last Cleaned
Stock	Mixing No.	Processing
Date Produced	Shift	Balance Wt.

Notes and Comments:

Wt. | No. Yds.

-2.0 -1.0 0 +1.0 +2.0

Length and Weight of end pieces.
Outside end ____ inches ____ oz.
Inside end ____ inches ____ oz.
Total ____ inches ____ oz.

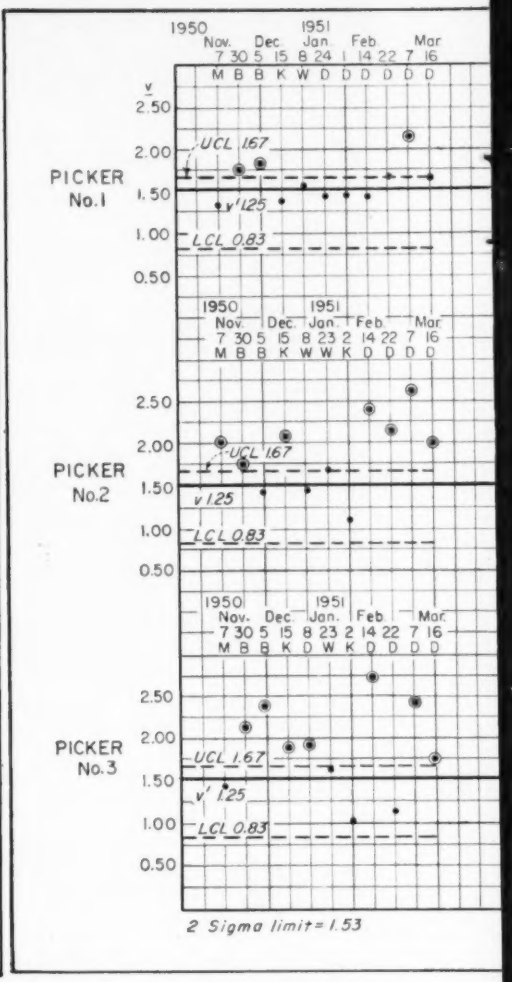
Items 1-3 inclusive determined from whole lap.
Items 4-8 inclusive determined from whole lap minus first two and last two full yards and end pieces.

	Test Averages	Standard	Min. Tolerance	Max. Tolerance
1. Net Lap Wt. (lbs.)				
2. Yds. Per Lap				
3. Wt. Per Yd. (oz.)				
4. Wt. Per Yd. (oz.)				
5. ST'D. Dev. (oz.)				
6. Co-ef. Var. ____ %				
7. Range (oz.)				
8. % Within ____ oz. Tol.				

Tested By _____ Date: _____

All full Yds. on graph. First and last two circled in tally column.

THIS FORM, designed by Bibb, is used to calculate picker-lap evenness on each picker every week. Lap-meter results are logged in the column headed "No. yds.," and the results are plotted on the graph. One difference in Bibb's calculations is that coefficients of variation, not standard deviations, are used to set the control limits.



RESULTS FROM THE LAP-METER FORM are plotted on this master graph, which is kept for each picker. Information on the sheet includes date of test, picker number, and cot-

How We Make Uniform PICKER

HIGHLIGHTS: A well-planned program aimed at improving picker-lap uniformity has enabled one of our mills to reduce rejected laps on nine pickers from 62 in the first six months of 1951 to 14 in the first six months of 1952. This reduction was made at low cost by applying sound quality control procedures and by following up with several picker improvements.

Based on a panel discussion at a recent meeting of the Textile Division, American Society for Quality Control.

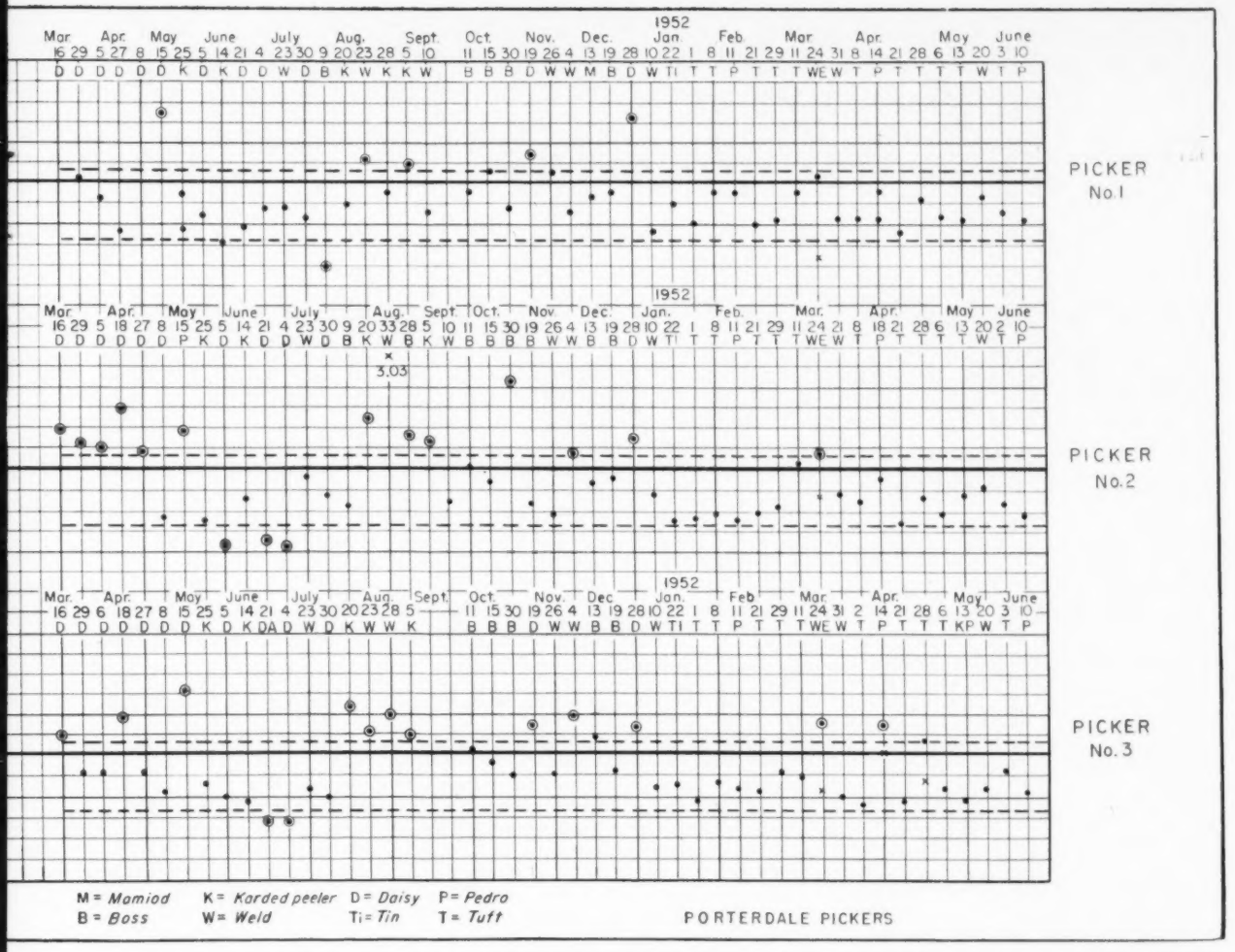
By L. C. SHEEHAN, Director, Efficiency Dept., Bibb Mfg. Co.

A SOUND QUALITY-CONTROL PROGRAM can pay for itself easily in improved picker-lap uniformity. First decide what kind of variation you want to measure, and then set your control limits—but just as important as the sound basis is what you do with the results. Here's the way we did it—and made better laps.

Standards Were Tightened

We used to judge the quality of the lap by the percentage of yards that were within a tolerance of ¾ oz. heavy or light. (At least 92 to 96% of the yards in any lap should fall within these limits.) After some experience we changed the tolerance from ¾ oz. to $\frac{5}{16}$ oz. and found that we could maintain this closer control.

We also use over-all lap weight as a control measure and allow ¾ lb. heavy or light for a 47½-yd. lap at 15½ oz. per yd. Our setbacks for this reason are 3 to 5% where only normal changing of stock is encountered.



ton mix. The upper and lower coefficient-of-variation control limits are ruled on the sheet. The control limits are based on three standard deviations, and there are warning limits at two standard deviations. Out-of-control points are circled, but no action is taken unless the recheck (shown by an X) also indicates that the picker is out of control. The letters at the top of the chart indicate the particular mix being run at the time of the test.

LAPS

Variation Coefficient Adopted

Although the number of individual yards per lap in tolerance is some measure of uniformity, we have found that the coefficient of variation is a more accurate measure.

It is true that there is some correlation between the percentage of yards in tolerance and the coefficient of variation of the lap, but this correlation is not absolute. The percentage basis does not give the correct value of each yard as the coefficient of variation does.

For example, on a percentage basis, 81.9% of the yards in one lap were in tolerance. This figure is not up to our minimum standard of 92% so we would ordinarily class this lap as unacceptable. But the coefficient of variation is 1.50 if the first two and last two yards are excluded, and 1.52 if all yards are included. We consider coefficients of variation up to 1.00% excellent, from 1.00 to 1.50% good, from 1.50 to 1.75 fair, and above 1.75% poor. Our temporary standard is 1.25%. The lap in question, with a coefficient of 1.50, is not the best lap we ever made, but is a good lap and should not be classed as unsatisfactory.

Discrepancies such as this one led us to adopt the coefficient of variation as a more accurate measure for our purposes.

New Controls Were Set

A lap from each picker is checked every week on the Saco-Lowell lap meter. The coefficient of variation is figured for the entire lap less the first two and the last two yards. Our standard variation coefficient is 1.25%.

Control limits where standard deviations are used are usually set at three times the standard deviation. We used this same basis to calculate our control limits for coefficient of variation, and we set the upper control limit at 1.67%, the lower control limit at 0.83%. These limits are based on a sample size of 40 because four yards of each 44-yd. lap are not used in the calculation.

An average-lap-weight chart is not kept because total lap weight is kept

within the ¾-lb. tolerance either way.

On nearly all of our pickers we are now getting a coefficient of variation lower than 1.25%.

Here's the basis of our control limits.

From the ASTM Manual on Quality Control of Material we find that control limits for a sigma chart with a given standard equal sigma prime plus or minus three times sigma prime divided by the square root of two times the number of yards in measurement. Since the coefficient of variation is found by dividing the standard deviation by the average, we divided both sides of this equation by x-bar and obtained a formula for control limits for coefficient of variation as follows: Limits are coefficient of variation prime plus three times coefficient of variation prime divided by the square root of two times the number of yards measured. Substituting our standard coefficient of variation of 1.25% in this formula, we get an upper control limit of 1.67% and a lower control limit of 0.83%.

How Pickers Are Checked

When a picker gets out of control we first check for a choke or chokes that might cause unevenness. We then check the evener and the feed.

Our feed has to be changed for the various stocks that we run. A rawstock-dyed lot has to be fed differently from a white lot, and some white lots differently from others. We study each lot for its characteristics and then adjust for peculiar running characteristics. Opening equipment affects picker laps when there are not enough feeders to get a good blend. Reworkable waste must be fed back as uniformly as possible.

We also found that pickers having No. 7 super-sensitive eveners produced more uniform laps. The throw of the evener should be so adjusted that a lap within the tolerance of plus or minus ¾ lb. can be made with the blending reserve either full or half full. Certain standard settings and gears must be arrived at as a starting point to get the picker in control, and from this point various adjustments for sensitivity can be made.

Filters and Overflow Boxes Help

In order to try to make a more uniform lap, we decided to replace the No. 2 filters on the finisher sections of our pickers with No. 5 filters since the No. 5 filters were superior and had more capacity. We also decided to equip the pickers with overflow boxes for the distributor lines to reduce chokes in the distributor and give more uniform operation.

Before these improvements were made we had many pickers out of control—so many that we did not consider it of paramount importance to recheck a picker that was producing a bad lap. We concentrated on better feeding and better cleaning to try to improve the condition. But after we brought the pickers in control about the middle of 1951 we found that we could investigate a picker when it was producing bad laps. When a bad lap is found now, we check another lap at random from the same picker. If this lap is in control, nothing further is done; but if this second lap is also out of control we get busy to locate the trouble. We check for chokes, we check the evener, and we check the feed. Of course we have to check the feed of the reworkable waste, and setbacks also have to be checked for proper feed.

We Like Pneumatic Let-Offs

In order to experiment further with our pickers to make a better and more uniform lap, we tested our pickers at another mill where we have eight one-process pickers equipped with Saco-Lowell pneumatic let-offs, chain drives to stop the front end, and felt-lined oil troughs to saturate the empty lap pin. We are now producing 54 yd. per lap as compared to 44 yd. before the three changes were made.

When we went to the 54-yd. lap we kept the ¾-lb. tolerance for total lap weight even though we could have increased the tolerance a little bit. We were able to make this further tightening in our standards because so few laps were being rejected under the 44-yd. arrangement. And we are continuing to have a very low reject rate on our 54-yd. laps.

Lap-Pin Play Must Disappear

For a picker to make a perfect lap there must be absolutely no play in the lap pin after the loggerhead is lowered and before the cotton under the pin is thick enough to prevent play. We found this play on many of our pickers. Sometimes the lip of the loggerhead comes in contact with some obstruction such as the head of a bolt, or the back part of the loggerhead may hit the cheek or plate of the picker—either of these conditions can cause lap-pin play. Even having one side of the loggerhead higher on the gearing than the other side will cause one end of the lap to be slightly larger in diameter than the other end.

Chain Drive Helps Startup

After a tight pin fit is assured, the next step is to get a good startup, and we've found that a chain drive does an effective job. With the chain drive, the front end of the picker stops when the lap is full and the knock-off gear stops the picker. This system leaves cotton under the press roll and affords the chance of a good startup. After the cotton is under the press roll, the new pneumatic let-off allows the loggerhead to come in contact with the lap pin in 1.2 sec. This action applies the pressure on the cotton almost simultaneously with the entrance of the cotton under the lap pin. With this weight on the cotton, the first yard of the lap is drafted with the same effectiveness as the other yards, and this yard will weigh correctly—not heavy.

Oiled Lap Pins Cling to Cotton

When our laps are doffed, the lap pin is pulled out of the lap and laid in a felt-lined oil trough on the front of the picker. While the lap is in the pan on the scale, the picker hand rotates the lap pin in the oil trough to permit the pin to acquire a film of oil. This oiled lap pin has an affinity for the cotton; and, consequently, the cotton fits around the lap pin smoothly and evenly to assure a good startup.

Size of Press Roll Reduced

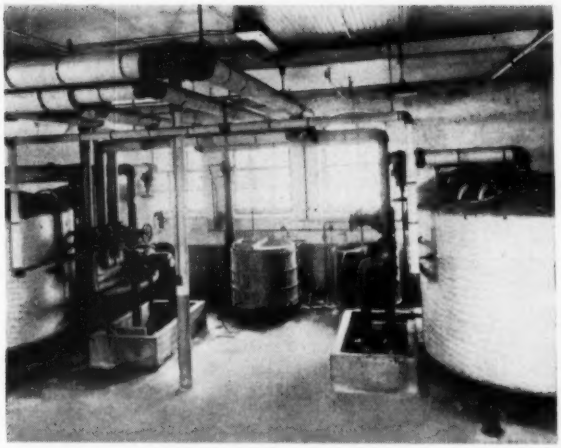
Another thing that we did in order to insure making a good lap was to reduce the diameter of the press roll from 3½ in. to $1\frac{7}{16}$ in. When we installed the pneumatic let-off and increased the yardage from 44 to 54, the lap rubbed the press roll. By reducing the diameter of the press roll we eliminated this condition.

(*Continued on page 206*)

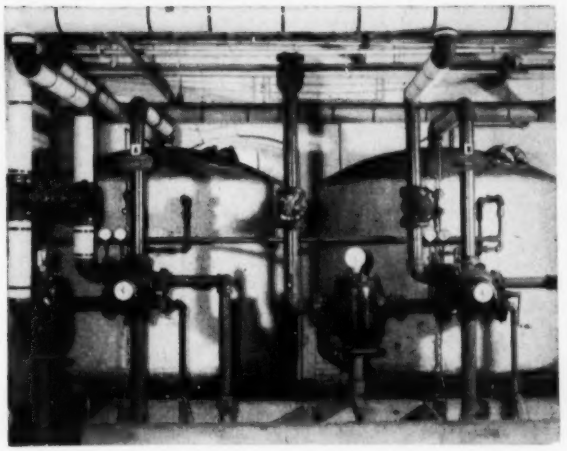
Is Picker-Lap Uniformity Important?

There has been much discussion about the value of making a good picker lap. Many people discount the importance of making a good lap, but with the drastic reductions in doublings that most mills now have it is obvious that making a uniform lap is of prime importance.

Before the advent of the one-process picker and long-draft roving we had 288 doublings and some mills had thousands. Now we have from 6 to 36 doublings. It is conceivable that with more doublings it might not be as important to make each process as uniform, but we believe that if the product is started with good uniformity we have a much better chance of making a uniform finished product. With this idea in mind we concentrated on the picker and set about making the best lap possible.



FOUR SAND FILTERS, 96 in. in diameter, and feed tanks for alum and alkali are practically self-sufficient, need little attention.



TWO WATER SOFTENERS, 90-in.-dia. high-capacity-zeolite type, require only an occasional flushing and brine-regeneration.

We Save $12,150 a Yr. By Purifying Our WATER

▶ This mill traced 60% of its rejected goods to bad water. A set of four filters with two water softeners was installed.

▶ Now, two years later, dye lots seldom have to be rerun and $12,150 is saved per year on chemicals, dyestuffs, soaps, and boiler-upkeep costs.

By M. R. KLARQUIST, General Manager, Empire Worsted Mills, Inc.

WATER CAN BE THE most expensive raw material used in the textile industry because it is employed in the greatest quantities. It has been estimated that over 30 gal. per yd. of cloth is used in scouring, dyeing, and finishing operations. Often, as much as 60% of unsatisfactory or unsalable goods can be traced directly to water impurities. Water can mean the difference between success or failure.

The savings made in scouring and dyeing, when polluted water of moderate hardness is softened and filtered, are striking. These savings kept us from either closing down or continuing to suffer from costly operating practices for our operations at Jamestown, N. Y.

Equipment Was Inadequate

Our former equipment used for filtering the water of the Chadakoin Creek consisted of two filtering tanks of the regular gravity-flow type. These two tanks were inadequate to filter the water properly because the creek was becoming more polluted every year and the presence of algae was presenting a problem. In fact, it was a question whether or not we could continue to operate our cloth-scouring facilities and our top- and piece-dyeing equipment unless something was done.

The water we used had the following characteristics: turbidity, up to 25 parts per million; color, up to 60 ppm.; hardness, 6 gr. per gal., or 96 ppm.; and pH, 7.7.

Here's What We Did

Permutit Co. engineers recommended that we install four 96-in.-dia. sand-and-gravel pressure-type filters that would handle a capacity of about 600 gal. per min. We had a clear well with a capacity of 9,000 gal. and two overhead tanks holding a total of 43,000 gal. The filters would be backwashed with the water from the clear well.

Due to the presence of algae and other impurities in the water, it was necessary to provide for chlorination.

A unit was installed at the intake house where a control of the amount of chlorine used could easily be handled. Two small tanks, one for alum to aid in filtering and the other for alkali to obtain better pH control, were also installed with the chlorinator.

Later, it was found that chlorination of the water supply helped to increase the capacity of the filtering tanks.

The water was difficult to control with the various chemicals added for internal treatment because the degree of hardness seemed to change every day. Because of this condition, we decided to install two 90-in.-dia. zeolite water softeners, filled with the new high-capacity cation-exchange resin, Permutit Q. These units would handle the capacity required and bring the water to zero hardness.

It Solved Our Problem

The installation was made in the fall of 1950. Gratifying results have been obtained. As a result of the control of the pH of the water and its reduction to zero hardness, our dyeings of wool top and piece goods im-

(*Continued on page 206*)

HOMOGENIZER PRESSURE holds steady at 1,500 psi. during a run. Pump pressure is maintained at 35 to 40 psi., and oil pressure is a constant 20 psi. Paul Stallings, supervisor of slashing, checking pressure here, worked with the homogenizer from the beginning.

THE FOUR NINE-CYLINDER SLASHERS are equipped with controls for size temperature, size level, and cylinder temperature. Shedding at the split rods is half as much for homogenized size. Hard size is about one-third less, and the slasher is easier to clean.

Homogenized Size for Spun Synthetics Saves $8,000 a Yr. in SLASHING

HIGHLIGHTS: Pearl corn replaced British gums as the major slasher-size ingredient, and Marion Mfg. Co. is saving $8,000 a yr.—Slasher and loom operations reflect other advantages of homogenization—Maintenance program keeps repair costs low.

By JAMES H. KENNEDY, Southern Editor, TEXTILE WORLD

About 6 mo. ago, Marion Mfg. Co., Marion, N. C., changed over from slasher size composed chiefly of British gums to homogenized pearl starch for sizing spun-synthetics warps. The savings on size materials alone during these 6 mo. have repaid the $4,000 the homogenizer cost.

Besides these savings, other benefits have been noted in slashing and weaving.

James Wyatt, superintendent of weaving and slashing, sums up the benefits this way: "With homogenized size, our warps are smoother, we have fewer size marks, and there's less hard size in the size box. We don't have as much shedding at the split rods or behind the loom, and balling up is now considerably less noticeable."

Marion makes a wide range of fabrics from spun yarns and combinations of filament and spun yarns. There's a 50-50 rayon-acetate blend, an all-rayon mix, and a blend with a little nylon in it. The fabrics are gabardines; and some of the constructions are 96x152, 105x60, 96x50, and 104x52. Yarn numbers range from 15s to 40s. All of these fabrics and combed oxfords have been run with homogenized size.

Five months were spent on tests and trials before the homogenizer was put into full-scale operation. Just four warps were slashed for the first trial. These warps ran for about 15 days—until they were small so that the test would show performance at the smaller diameter. This first test gave satisfactory results; so the mill decided to make tests on several other styles.

Pretty soon the tests were increased to half a set, and the homogenized warps were run for a couple of weeks before another half set was slashed.

Viscosity and Pickup Are The Same

In the beginning, Marion cut the size formula a few pounds and also ran the homogenizer at 2,000 psi. But these changes did not prove satisfactory; so Paul Stallings, supervisor of slashing, standardized on the full formula and 1,500 psi.

The approach throughout was to keep viscosity the same. Pickup, too, has been unchanged.

British gums previously used by Marion have been replaced by a formula that is made up of pearl starch, a plasticizer, and a wax. The difference in the cost of sizing materials is almost $2 per 100 lb.

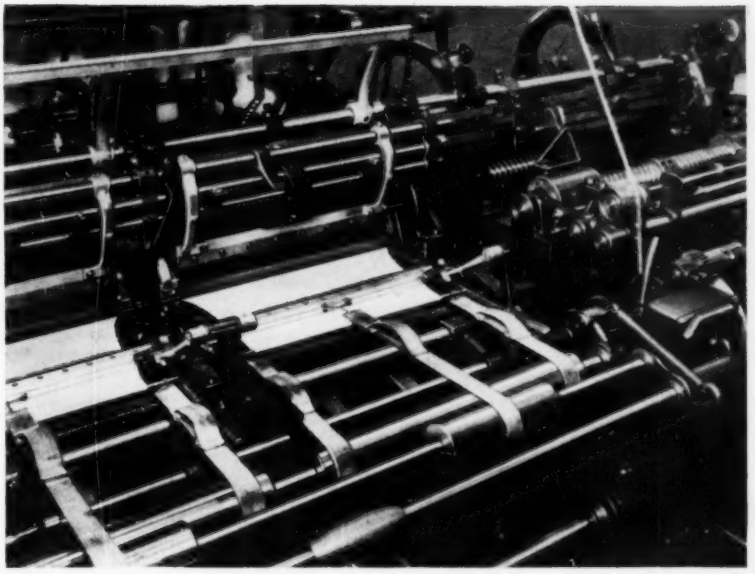
The finisher did not report any difficulty in removing the new size from

(*Continued on page* 188)

Six Things That Help Remove Caked NYLON SIZE

▶ Caked nylon size on full-fashioned hosiery machines must be removed regularly to prevent damaged fabric. This article gives the materials and methods used successfully in one mill to combat the caked-size problem.

By STAN GELLERS



THESE CRITICAL WORKING PARTS of a full-fashioned hosiery machine must be kept clean to produce good fabric. The problem is to use cleaning solutions that will remove caked size and dirt without damaging the sensitive machine parts.

CLEANING NYLON-SIZE accumulations off needles, sinkers, dividers, and other machine parts is a job that has to be done in all full-fashioned hosiery mills.

The pointers given here represent successful practices in one mill, but it must be remembered that mills have found that climate is an important factor. Compounds and techniques that work satisfactorily in one locality may not be best for another locality.

Mills, therefore, must select and use size removers with caution until one is found that meets their needs.

1. What Solution To Use

This mill uses a lukewarm solution made of 98% water (hardness index 50 to 100), 1.75% sulfonated mineral oil, and 0.25% wetting agent.

The solution is applied to the needles and sinkers with a soft brush when the machine is in service (never at the end of a day or during a shutdown period) and during the welt or afterwelt knitting.

2. Remove the Old Size

After the cleaning solution has had time to loosen the coated size on the machine parts, it is removed either by continuing knitting or with compressed air.

If compressed air is used, a pressure of 60 to 75 psi. of moisture-free air is satisfactory. A hose with a hooked nozzle curved to about 180° is used so that the size accumulation can be blown out the front of the machine and not forced back into the jackbeds, where it may result in damage to the parts.

3. Oil the Cleaned Parts

Needle oil is applied to the machine parts after the solution is removed to prevent corrosion of the needles, sinkers, and dividers.

A blowtorch provides a satisfactory means for applying oil to the points where it should be used. Oil is sprayed from the nozzle of the blow torch by air pressure built up in the torch by the hand pump. A uniform spray of oil is applied to the parts, and oil is forced into the sinker heads where it is needed to remove all traces of the cleaning solution.

Commercial spray guns with adjustable nozzles are available. They are excellent for applying protective oils to the machine. One such gun holds about 1 qt. of oil and provides a continuous fine spray that coats needles, sinkers, dividers, knockover bits, etc., in a uniform manner with a protective coating of needle oil. Keeping the orifice adjusted to about a 0.043-in. dia. reduces the amount of oil vapor blown into the air.

4. When Should Moistening Troughs Be Cleaned?

This mill cleans troughs thoroughly at least once every 3 mo. However, local conditions and trough solutions used affect the cleaning frequency.

The best procedure is to check the trough solutions at frequent intervals with litmus paper or some other pH-test method to determine the alkalinity or acidity of the solution. If the solution is acid, it is usually replaced or made alkaline by the addition of chemicals. When the acidity cannot be corrected, the solution should be removed regardless of how short a time it has been in the trough. The trough should then be cleaned thoroughly before the solution is replaced.

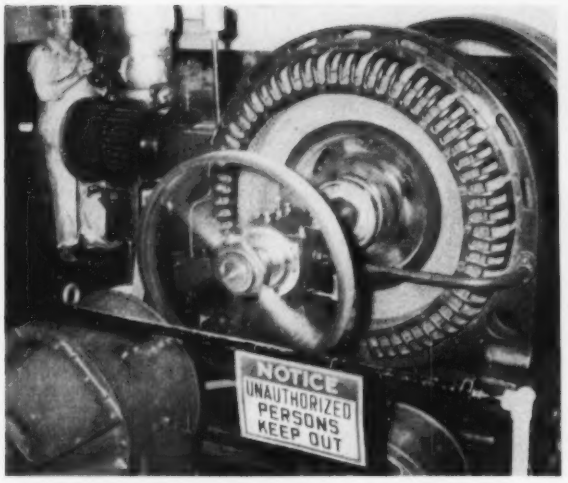
5. How To Clean Welt Bars

Welt bars that do not function satisfactorily after being in use for a short period of time usually have an excessive amount of size, dirt, lint, or other foreign matter accumulated on and between the hooks. The size prevents the hooks from resuming their normal position when they are forced out of line, and improper functioning of the bar results when the machine is placed in operation.

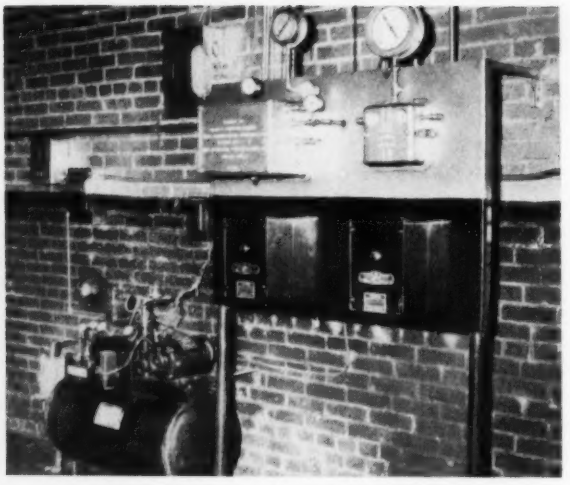
The method used at this mill for cleaning welt bars is as follows:

A 3½-in.-dia. zigzag polishing brush is mounted on a high-speed electric drill held in a vise. The machine speed is about 1,800 rpm. A petroleum-solvent cleaning agent is applied, and the bars are held against the

(Continued on page 202)



POWER TO RUN THE MILL is generated by this 100-kw. General Electric steam generator. Week-end and standby power is provided by Georgia Power Co.



CONTROL INSTRUMENTS for automatically controlling steam- and power-plant operations are conveniently mounted on a wall. Control settings are made to meet mill demands for steam.

GAS-FIRED BOILER
Pays Its Way at Rome Hosiery

HIGHLIGHTS: Rome Hosiery Mills changes over from coal to natural gas, with oil as a standby fuel—New boiler saves better than 25% of the old-boiler operating costs—Key to good operation is proper maintenance.

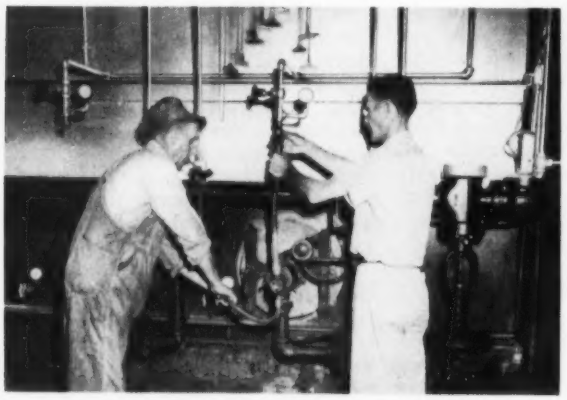
By E. DALTON WHITE
McGraw-Hill Atlanta Bureau

TOTAL COST OF generating steam and electricity has been reduced 25 to 30% at Rome Hosiery Mills, Rome, Ga., since a new gas-and-oil boiler was installed to replace the old coal-fired boiler. These savings are more than paying for the investment. Also, there has been an increase in operating efficiency, since the old coal-fired boiler was always giving trouble.

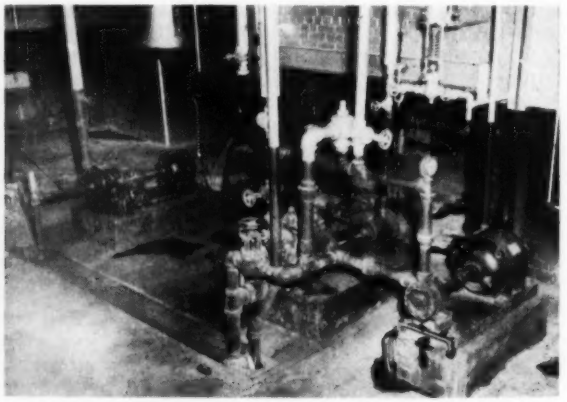
Rome Hosiery uses a lot of steam to operate its finishing plant and its electric-power generator. So far, the power company has not been able to show that the mill can purchase power as cheap as it can generate it. So, with constant load, the steam boiler can be operated the year round at efficient capacity.

Problems with the coal-fired boiler were many, especially when it came to handling fuel and ash. Strikes in the coal fields, causing an uncertain

(*Continued on page 210*)



CHANGEOVER from natural gas to oil can be done in 5 min. John Cash, left, and J. F. Jacks, power-plant superintendent, demonstrate the changeover method.



A 15-HP. ELECTRIC TURBINE, made by General Electric, is tied in with the regular water line. In case of an emergency, the turbine can be used as a feed-water pump.

Control Your VIBRATION On High-Speed Twister Spindles

Most vibration on an uptwister comes from unbalanced bobbins. There are three ways to attack this problem—

- **Use balanced bobbins**
- **Use spindles that allow some unbalance**
- **Use special mounts that isolate vibrations**

By HANS H. WORMSER, Universal Winding Co.

SPINDLE-BOLSTER VIBRATION is one of the throwster's biggest headaches, but there are three kinds of aspirin for him. He can weed out or balance the bobbins that cause his trouble. He can use spindles that operate at high speeds with unbalanced bobbins but without excessive vibration. And he can have the spindles mounted so that most of the remaining vibration is not transmitted to his swing and frame.

What Causes Vibration

What is the cause of spindle-bolster vibration? If we start with a well-made, straight spindle, which is properly mounted and leveled, the primary cause of spindle-bolster vibration is the unbalance of the load the spindle carries. This unbalance may be caused by such faults as out-of-roundness and deformation of the bobbin, wear in its bore, or uneven redrawing of the yarn on the bobbin. It may also be caused by factors inside the bobbin that are invisible and cannot be measured with a micrometer or judged by eye.

A bobbin turning on a spindle at high speed has so much inertia it will rotate on an axis of its own choosing. Unless it is perfectly balanced, that axis will not coincide with the axis of rotation of the free spindle blade. The greater the unbalance, the further the blade will be forced to move from its free axis. Some of that movement will inevitably be transferred to the spindle bearings and will be reflected in the bolster as vibration.

Unfortunately, many of the bobbins now in use were made before the industry became balance conscious. Many others have become vibrators because of strenuous use and handling. Most mills think they cannot afford to throw away all their bobbin equipment, and they want other solutions to their bobbin-balance problems.

But even in mills where the bobbin unbalance condition is considered very severe, checks have shown that only 25 to 30% of the bobbins cause serious vibration. In most mills the fraction is far smaller. But by rotating from one spindle to another on successive doffs, these few bobbins can spoil the whole installation in time. If the offenders are culled out or rebalanced, the vibration problem can be practically eliminated.

Comparative Tests Show Causes

We have gained a good understanding of the properties of bobbins that cause bolster vibration, wear, and high power consumption by making comparative spindle tests. We have used actual bobbins as well as simulated bobbins made of steel, and we can unbalance these steel test bobbins in known amounts and locations. We can simulate actual unbalance existing in mill bobbins by fastening one screw into each head of a bobbin.

If screws weighing 10 gr. are placed 1 in. from the bore of the bobbin, they will act as 10 in. gr. of unbalance. Let us take three bobbins for illustration. On one bobbin, the screws will be on the same side; on the second, they will be diagonally opposite one another on the two heads. A standard bobbin will be the third.

First, we find that static balance or unbalance does not determine a bobbin's effect on a spindle at high speed.

When placed on horizontal knife edges, the opposite-side-weighted bobbin will come to rest in any position just like a standard bobbin. This condition indicates static balance.

The same-side-weighted bobbin will come to rest with both its screws pointing down.

Yet, when the three bobbins are in turn run on one spindle at high speed, the bolster vibration is far more severe for the opposite-side-weighted bobbin than for the other two.

The time-honored method of finding bobbin unbalance by observing or feeling the upper spindle blade does not discover the kind of unbalance that does the real harm. Upper-blade vibration and bolster vibration are only distant relations.

Machine Spots Bad Bobbins

Our Bobbin Balance Indicator is a recent development, and we have about 20 units on extensive field tests. It fills the need for an inspection unit to show up those bobbins that need correction most. It does not balance bobbins or tell where and how they should be balanced. Its purpose is to directly indicate how seriously a bobbin is unbalanced in terms of its effect on the spindle on which it is to run. We believe that this effect is the final criterion of bobbin unbalance.

It can be used to grade bobbins in terms of the vibration they cause and to point out bobbins that should be replaced or balanced. By using two spindles in turn, an unskilled operator can check 300 to 500 bobbins an hour.

The indicator is a spindle-vibration meter. Two spindles are so mounted in it that their bolster movement reflects the vibration a bobbin gives to the spindle. Because no such measurement has been taken before, we have established the Universal Unit of Unbalance as a new measuring stick for effective bobbin unbalance and have defined this unit in terms of standard units: 10 Universal Units of Unbalance is that unbalance caused by 10 in. gr. of unbalance in each head on opposite sides of a bobbin with a 3-in. head, a 5-in. traverse, a 1⅜-in. barrel, weighing 8 oz., or any other bobbin that has the same effect on spindle balance.

A bobbin unbalanced 8 Universal Units will cause more vibration on the same spindle, regardless of type, than a bobbin with 5 Universal Units. Our same-side-weighted bobbin, though unbalanced 10 in. gr. in each head, may read about 1 Universal Unit; our opposite-side-weighted bobbin could be unbalanced about 10 Universal Units for the same number of inch-grains in a different relative

(Continued on page 125)

Leadership Checklist

▶ Most men in management positions unconsciously follow a flexible leadership approach that adapts itself to the problem at hand and changes from one of the three methods given here to another as needed, or in combination.

Democratic Method Is Good

. . . for dealing with a cooperative individual

. . . for guiding a person whose ideas flourish under encouragement

. . . for planning activities in which the subordinate can share responsibility for results

. . . for letting subordinates know in advance of unfavorable conditions coming up

Autocratic Method Is Good

. . . for guiding the timid so that they will take action

. . . for directing the man of action whose efforts need channeling

. . . for gaining the obedience of subordinates

. . . for obtaining quick action in times of emergency

Free-Rein Method Is Good

. . . for bringing out ability and initiative

. . . for increasing an individual's responsibility for his own activities

. . . for guiding highly trained technicians

. . . for building up goal-mindedness in the common search for successful results

To Be a Group Leader— Learn the Various Approaches

▶ The qualities of a good leader can be learned just like anything else. But they must be developed, conscientiously at first, out on the job as leadership challenges present themselves.

▶ With a little practice, judgment, and patience, any man can become a better leader. This discussion does much to point the way.

By AUTEN URIS

IN RECENT YEARS, many psychologists and management experts have talked about leadership in terms of democratic leadership, autocratic leadership, and a third type usually called laissez-faire (free-rein) leadership. Generally, the terms have this meaning:

Democratic leadership. The leader draws ideas and suggestions from the group by means of discussion and consultation. Individuals are encouraged to contribute towards setting of policy. The agreement of individuals with group decisions is sought.

Autocratic leadership. The leader assumes full responsibility for all action and mainly seeks obedience from the group in following his directives. He determines policy, and he considers decision-making as solely his activity and responsibility.

Laizzes-faire or *free-rein leadership.* The free-rein leader's activity is kept to a minimum. He's on hand essentially to implement the activity of the individuals in the group. He provides materials, information, and a minimum of control. To some extent, he functions as a source of information.

The Secret of Leadership

With these three definitions in mind, the three following points can be made:

1. Leadership is a skill.

The reason behind this fact is important. Leadership is not a personal quality, like eye coloring, but an acquired skill, like fly-casting or golf playing.

2. There are three basic methods (democratic, autocratic, and free rein) that can be used as leadership approaches.

Contrary to the beliefs of many, these three leadership approaches are not mutually exclusive. No one has to choose between being a democratic or an autocratic leader, for example. That would be like telling a carpenter he had to choose between using a hammer and a saw. In the course of a job, he'll use both.

Most executives follow this procedure of varying their leadership method as a matter of course. Note, for example, Mr. Smith, a successful leader, in action:

a. He *consults* with his purchasing agent on a supply matter about which a decision must be made.

b. He *directs* his executive assistant to write up a progress report on a particular activity.

c. He *suggests* an angle for a new campaign to his sales head and then puts him on his own to carry out the idea.

All three people with whom Mr. Smith dealt in the above case were subordinates. But there was an obvious difference in the approach used with each one. Smith consulted (democratic method) with the purchasing agent, gave a peremptory order (autocratic method) to his assistant, and with the sales manager pointed out a direction in which to move, but gave the man free rein for the implementation of the idea.

3. The successful leader is the man who understands the three basic approaches and uses them as required.

The successful leader is not entirely a democratic leader, or an autocratic leader, or a free-rein leader. He is the man who understands—either instinctively or otherwise—the factors that make one or the other of these approaches the proper choice in a given situation. And in addition, he possesses the flexibility to tailor his method to the situation, as it changes.

How To Handle Whom

These major guides can help anyone decide which approach to use:

1. Consider the personality of the individual.

In general you'll find that

. . . *The cooperative individual* will function more satisfactorily under a democratic leader. Since his self-assertiveness takes constructive paths, he'll head in the right direction when he's on his own.

. . . *The insecure individual*, the man who tends to be dependent on his superior, does better under the firmer hand of an autocratic leader.

. . . *The aggressive, hostile type* of person also does better under an autocratic leader. His latent hostility must be firmly channeled to confine his activity to constructive purposes.

. . . *The individualist*, the solo player, when he knows his job, is usually most productive under the free-rein type of leadership.

2. Consider the particular situation.

Let's say a fire breaks out. The leader can't take the time to discuss methods of action. He'd issue his orders just as fast as possible.

Of course, that's an extreme case. But it's nevertheless true that in any critical situation where there is a need for faster or decisive action, the autocratic type of leadership is usually most satisfactory.

On the other hand, the leader who may be ordinarily autocratic tends to adopt a democratic approach when, for example, he is faced by circumstances he fails to understand or a problem for which he sees no solution. In that case, the alternative of consultation and discussion with members of his group is the logical one to adopt.

3. Consider the make-up of the group.

The chief factor in determining the method of leading to use is the types of individuals in the group. Let us take a look at, for example, three typical groups found in many management organizations today and the leadership approach that will, in most cases, produce the most satisfactory results:

a. *Democratic approach is best.* A works manager has five subordinates who report directly to him. Each man is capable of taking sound, independent action. In areas where responsibilities overlap, they work well together, without friction or emotional involvements.

b. *Autocratic approach is best.* Here, the leader has charge of a group that is essentially untrained and undisciplined. It's the kind of group one sometimes finds in a new department in a plant that is expanding rapidly. The supervisor, or leader, must represent a firm and decisive authority to provide for the group the kind of leadership it needs.

c. *Free-rein approach is best.* A department head is in charge of a highly-trained professional staff—a group of engineers, for example. Cross-communication among the men about the work is unnecessary and even undesirable. Although they are working on the same problem, as many different solutions as possible are being sought. It's unnecessary for the leader to provide much guidance, because implicit in each man's training is the knowledge of methods and techniques around which his work revolves.

These, then, are the tools of leadership and the methods governing their use.

But as is true of any set of tools, results depend on how they're applied.

Evaluating Your Own Leadership

► In making an appraisal of his leadership practices, many a man suffers from at least three mistaken impressions:

Misconception No. 1

That democratic leadership, in which the leader shares his decision-making function with his subordinates, for example, is the most desirable leadership method.

Misconception No. 2

That the democratic leader should be a passive figure, holding back his own ideas and energies, so as to foster the initiative and the ideas of his subordinates.

Misconception No. 3

That the autocratic leader, who dictates the specific activities of his group, is unreasonable, self-assertive, and bound to lose the support of intelligent group members.

► But the fact is that the democratic method can fail completely in its purpose if, when necessary, the democratic leader is not as alert and aggressive as an autocratic leader, who in certain situations can produce desirable results when any other method might fail.

Relative Importance of Fiber Properties In Predicting Strength, Appearance, and Neps

	With standard method	With Causticaire method
Yarn Strength (36s yarn)	1. Fineness (array) 2. Strength 3. Upper-half mean length 4. Standard maturity 5. Uniformity index	1. Fineness (array) 2. Strength 3. Causticaire maturity 4. Upper-half mean length 5. Uniformity index
Yarn Appearance (36s yarn)	1. Fineness (array) 2. Strength 3. Standard maturity 4. Uniformity index 5. Upper-half mean	1. Causticaire maturity 2. Upper-half mean 3. Strength 4. Fineness (array) 5. Uniformity index
Neps In Card Web	1. Fineness (array) 2. Standard maturity 3. Strength 4. Uniformity index 5. Upper-half mean	1. Causticaire maturity 2. Uniformity index 3. Strength 4. Fineness (array) 5. Upper-half mean

RELATIVE IMPORTANCE of each fiber property changes if the Causticaire method is used. If maturity is determined by the present standard method, fineness is first in importance for each spinning quality. But if maturity is determined by the Causticaire method, fineness drops to fourth in relative importance for predicting appearance and neps. The other properties are changed in rank also. It must be remembered though, that all properties, not just the first in order of importance, contribute to the over-all prediction.

Causticaire—New Method for Finding Cotton MATURITY and FINENESS

HIGHLIGHTS: The Causticaire method stands a good chance of replacing the standard method as soon as procedures are perfected. It predicts spinning performance better and speeds up this phase of fiber testing. A single scale is used for all types of cotton. The relative importance of maturity and fineness is changed.

THE CAUSTICAIRE METHOD for determining cotton-fiber maturity and fineness, recently developed by the Cotton Branch, U. S. Dept. of Agriculture, promises to replace the standard method now in use. The Causticaire method gives a maturity value with greater significance in evaluating the spinning qualities of cotton and speeds up this phase of fiber testing.

With the Causticaire method, Micronaire readings on untreated cotton and cotton treated with sodium hydroxide are taken on a single linear scale graduated in tenths of an inch. This scale is referred to as the Causticaire Maturity Scale. The maturity value is arrived at by the formula for the maturity index. The fineness value is found with a formula the basis of which is the Causticaire reading of the treated sample of cotton. A direct-reading fineness scale will be developed as soon as adequate data are collected.

Based on a U. S. Dept. of Agriculture report "The Causticaire Method for Determining Cotton-Fiber Maturity and Fineness," Preliminary Report, August, 1952, Washington 25, D. C.

Here's the Causticaire Procedure

Samples are selected from bulk samples and blended on a mechanical fiber blender. Micronaire tests are made on the sample, with the Causticaire maturity scale and the standard instrument procedure being used. Readings are made to the nearest 0.05 in.

After the readings are made on the untreated samples, the samples are saturated in a solution of sodium hy-

droxide (40° Twaddle) at room temperature. Then the samples are thoroughly washed in warm water and dried in a forced-air oven at 220° F. The samples are conditioned and processed through the mechanical fiber blender under standard atmospheric conditions. They are then tested in the same manner as the untreated samples.

Maturity index and fineness values are found with these formulas:

$$\text{Maturity Index} = \frac{\text{Causticaire reading untreated} \times 100}{\text{Cauticaire reading treated}}$$

$$\text{Fineness (wt. per in.)} = -5.59 + 1.28\ (\text{treated Causticaire reading})$$

Inadequacy of Maturity Test

The purpose of a maturity test is to determine the cell-wall development of cotton fibers. In the present method used in the Cotton Branch, USDA, a sample of cotton treated with an 18% solution of sodium hydroxide is used. From 900 to 1,200 fibers from each sample are examined. Maturity is determined at one point only along the length of the fibers. Fibers whose combined wall widths are equal to or greater than their lumen widths are classed as mature fibers; all other fibers are classed as immature. The maturity value for the sample is the average percentage of fibers that are classed as mature.

This procedure disregards the fact that cell-wall development is not uniform throughout the entire length of the fibers. The inadequacy of such a test to measure cell-wall development accurately is obvious. A test that measures the actual degree of cell-wall development throughout the entire length of fibers, or the total amount of cellulose in a specimen of fibers, would provide data that would be more significant in relation to spinning performance. The Causticaire method is believed to provide such data.

Maturity vs. Fineness

The maturity value can obscure the true measure of fineness. The Causticaire method of measuring maturity should give a more exact measure of cell-wall development as a basis for a more accurate Micronaire test for fiber fineness.

The Micronaire already provides a rapid method for getting the weight-per-inch fiber fineness. But the present method, in which curvilinear scales are used, has the disadvantage of requiring different scales or adjustment factors for the various types of cotton. This requirement is conceded to be the result of the differences in fiber shape.

However, when treated with a caustic, fibers swell and approach a cylindrical shape. So it is logical that Micronaire readings on swollen fibers would approach the same level for all types of cotton. The Causticaire single linear scale makes use of this approach to eliminate the necessity for more than one scale.

With the Causticaire method, the operation of the Micronaire is the same as in the present method, except for the scale. The Causticaire scale is placed with the zero point at the bottom edge of the flow tube, where the float rests. The scale extends 10 in. up the side of the tube. Calibration points are the standard positions. At these points, the Causticaire maturity scale shows readings of 4 in. and 8 in. for the lower and upper calibration points. Readings on this scale are called Causticaire maturity readings.

Maturity tests alone can be done in less time with the Causticaire method than with the present standard method. For fineness tests alone, several minutes more per test are required by the Causticaire method; but when fineness and maturity tests are run on the same sample, the fineness value is obtained with no additional time.

Results of Causticaire Tests

Statistical procedures were used to see if the Causticaire maturity reading helps to predict spinning performance better than the standard maturity value.

Spinning and fiber data were available on 52 American Upland cottons with a fairly large range of fiber properties. The fiber data (upper-half mean, uniformity index, fineness by array, and maturity) were pitted against each spinning quality in two sets of multiple correlation analyses. For one set, the fiber data included the standard maturity value; for the other set, the fiber data included the Causticaire maturity value.

Each correlation analysis produced a number that represents the amount of agreement between fiber data and the spinning quality. To put it another way, the correlation number shows how well the fiber data predict spinning performance.

This predictability is the whole purpose of making fiber tests, of course. If the correlation number is significantly higher for the analysis that included the Causticaire maturity value, the Causticaire method is an improvement over the standard method.

The spinning-performance figures used in these tests were: strength of 36s yarn, appearance of 36s yarn, and neps per 100 sq. in. of card web. The correlation value was greater in each case when the Causticaire maturity value was included in the fiber data. The increases in the correlation value were quite large for the appearance of 36s yarn and for the number of neps per 100 sq. in. of card web.

Effect of Each Property

A further test was made to determine how much each fiber property contributed to the degree of correlation between the fiber data and the spinning quality. The Causticaire maturity index showed significant contributions to the correlations with neps per 100 sq. in. of card web and appearance of 36s yarn; the standard percentage of mature fibers did not. Both methods contributed to strength of 36s yarn, but the maturity index was the larger.

This test shows the comparative rank of importance of the fiber properties as a predictive value. In every case where the standard maturity figure was included in the fiber data, fineness ranked first in importance as a predictive value. But when the Causticaire maturity index was included, the Causticaire index ranked first and fineness ranked fourth for both appearance of 36s yarn and neps per 100 sq. in. of card web. For strength of 36s yarn, fineness still ranked first and the Causticaire index third.

In every case, the Causticaire index ranked higher in importance than the percentage of mature fibers.

Why a New Method?

None of the previous methods of fiber-maturity or fineness determination—polarized light, microscope, differential dye, aeralometer, etc.—adequately predict spinning performance.

Cell-wall development, in addition to affecting spinning, also has an influence on finishing and dyeing properties.

Causticaire is a significant development in the direction of filling the need for a better method of determining important processing characteristics in the laboratory.

SUNOTEX PROCESS AID SAVES $4,000 A YEAR

A mill making fine-quality woolen fabrics was well satisfied with the process aid it was using during the picking operation. But a Sun representative pointed out that Sunotex WO-410 could do an equally good job at a substantial saving. It was decided to run production tests.

These proved so convincing that the company changed to Sunotex WO-410. In the six years that have passed, this process aid has saved about $4,000 yearly. In the meantime several other process oils have been tried out to keep the mill abreast of progress. But none could match the Sun product. Those which performed as well were far more expensive, and those which were cheaper proved inadequate. Recently the plant superintendent said: "Sunotex WO-410 has performed with 100 percent satisfaction during the entire period of use in our plant and has definitely proved to be the least expensive process oil that will do the job properly."

For complete information on Sunotex WO-410 and other Sun process aids for the textile industry, call your nearest Sun office or write SUN OIL COMPANY, Philadelphia 3, Pa., Dept. TW-3.

REPLACES COSTLY AID. The process aid formerly used by this manufacturer of fine-grade woolen fabrics did a satisfactory job. The company switched to Sunotex WO-410, however, after a production test proved it could equal the performance at almost half the price.

MIXES WELL. By adding Sunotex WO-410 to warm water and agitating vigorously, the mill easily obtains a very stable 4:1 emulsion. This means uniformly even application of the Sun process aid and unvarying fiber protection.

SCOURS OUT COMPLETELY. No Sunotex WO-410 remains after scouring. Therefore finished cloth is never "cloudy," never has a disagreeable odor. Also, the scourability of Sunotex assures level dyeing.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. • SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

SUNOCO

What You Need for This Control-Testing Laboratory

A small air-conditioned room will suffice as a laboratory for control testing. The outlay involves very little major equipment and should pay for itself in a short time when the product must meet certain standards.

For the tests mentioned in this article, the following equipment and materials are needed:

Fadeometer
Abrader (Taber or Stoll)
Centrifuge
Conditioning oven
Distilled water
Mason jars
Thermometers
Graduated cylinder
Multifiber test fabric
Hot plate
Beakers, assorted
Clamps
Weights, 27 lb.

Careful Dyeing, Finishing, and Testing Reduce Rejects of AUTO FABRICS

► A New England mill found its rejects of auto-body cloths and upholstery fabrics too high.

► Careful dyestuff selection and altered finishing practices, plus a few simple laboratory tests, brought the goods up to quality.

► The tests given here are not standard, but they have served the mill's purpose of forestalling rejections.

By S. E. MIRGH

PROCUREMENT OFFICERS of the larger automobile companies are becoming more conscious of the need for careful control of the physical and chemical properties of the fabrics they buy for auto-body cloths and upholstery. They know what constitutes good end-use characteristics.

Mills must be reasonably sure that each shipment of cloth will pass inspection. Since every other part of a modern automobile is subjected to strenuous testing programs, it is logical to expect certain specified minimum criteria of the fabrics used.

A New England mill that makes a lot of cloth for use in automobiles found that tighter control over the quality of its fabrics was necessary. Rejects were running so high that the automobile fabrics were not profitable.

The following tests were devised by the mill or adapted from standard tests to meets its needs. They were part of the tightening-up program that reduced rejects and turned loss into profit.

Wetfastness

In addition to fastness to wet rubbing, the upholstery should not contain any excess of water-soluble color that would stain a garment if the cushion or the garment were soaked in a shower. The finish should be such that its appearance will not be materially altered if the upholstery is rained on.

Sometimes fastness to perspiration is required. However, if an auto fabric is fast to acid perspiration and alkaline perspiration, it should be practically foolproof to any set of wet conditions that could arise in normal use.

Three of the tests specified for water fastness are as follows:

—Spotting

The fabric must show no signs of permanent spotting after a small area of its surface has been wetted with water at room temperature and allowed to dry. Color change or roughing of surface finish are both objectionable.

—Bleeding

A 4x4-in. sample of the fabric is shaken in 200 c.c. of distilled water in a closed bottle or preserve jar at room temperature for 1 min. There should be only slight, or no, discoloration of the water.

—Staining

Place a 2x6-in. sample of the fabric to be tested face to face with a piece of multifiber test fabric of the same size.

Immerse these pieces in 200 ml. of distilled water in a 250-ml. beaker at 100° F. and thoroughly wet out.

Roll the two swatches together firmly and tie them with a piece of white yarn so that they will not become unrolled.

Place this roll in the beaker of distilled water again. Place the beaker with water and immersed sample in an oven at 175° F. and allow to remain there for 2 hr.

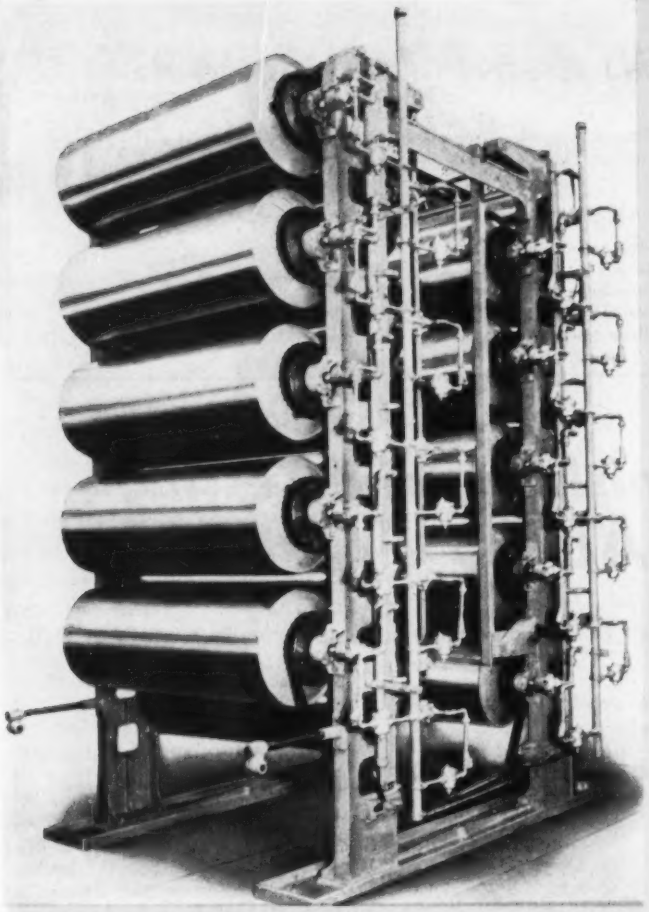
Remove, squeeze, and allow to dry in air. Compare the multifiber fabric with the original for staining, and compare the shade of the sample to the original swatch. Staining and color change must be no greater than the specified limits.

Lightfastness

For all practical purposes, the Fadeometer is an adequate instrument for testing lightfastness. A fabric that shows no fade after 25 hr. in a standard FDA-R type of Fadeometer and that shows a moderate amount of fading after a 50-hr. exposure should be of adequate lightfastness to meet the life-expectancy requirements of the normal car. A fade "on tone" is far less objectionable than a fade to a tone radically different from the original shade.

Stretch and Set

A relatively new specification is referred to as stretch and set. This requirement has been set forth by only one procurement office to date. It is an attempt to determine how much the fabric will stretch, both warpwise



Built up to Performance ...down to a price

It's here! An engineered Cylinder Dryer at a competitive price. Made by Butterworth, famous for fine drying equipment for 133 years.

You'll get more drying capacity for your money because your installation is engineered to do *your* drying job. Butterworth engineers take into consideration weight of cloth, degree of moisture content, and dryness desired. Cylinders may be arranged vertically or horizontally depending on space limitations in your mill.

Choice of copper or stainless steel cylinders . . . fabricated or cast iron columns . . . gear or sprocket and chain drive.

Butterworth Cylinder Dryers are made in our new plant at Bethayres, where new precision machinery, including automatic welding equipment for both coded and uncoded cylinders, assures maximum fabricating economies.

Before you do anything about increased drying capacity, put it up to Butterworth.

H. W. BUTTERWORTH & SONS CO.
Bethayres, Pennsylvania

1211 Johnston Bldg., Charlotte, North Carolina
187 Westminster St., Providence, Rhode Island

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing and Embossing
Pot Spinning Machines for Synthetic Fibers
Calender Rolls : : Tenter Chains

BUTTERWORTH

and fillingwise, and how much of that stretch will be permanent. The test method is probably tentative and may be subject to further refinements.

—Stretch

Cut a sample of the fabric 3x9 in., and mark off a 3-in. section across the center of the sample. Clamp a 27-lb. weight to one end of the sample, and suspend the weight vertically for 10 min. Measure the increase in length of the 3-in. section while the weight is still attached, and calculate the percentage of stretch.

—Set

Remove the 27-lb. weight, and allow the sample to recover in a horizontal position for 10 min. Measure the increase in length of the 3-in. section, and calculate the percentage of set.

This test is conducted in a standard conditioned laboratory at 70° F. and 65% r.h. Results must be within specified limits.

Abrasion

Abrasion testing of fabrics in general is a much-discussed and debatable subject. Many testing devices are available. The degree to which tests made on any of these various pieces of equipment may be correlated to actual wear conditions still awaits further comparisons and experience. For the time being, many automobile specifications call for 1,000 cycles of abrasion on a Taber Abrader with 1,000-gram weights and CS-10 abrading wheels.

Shrinkage

Shrinkage of an automobile fabric due to wetting, of course, would be an objectionable feature, especially if shrinkage were excessive. Requirements usually call for shrinkages not to exceed 7 to 9%. One test method is as follows:

Mark off a 10x10-in. test specimen on an 11x11-in. test sample, and immerse the sample in clean tap water (70° F ± 2° F.) until thoroughly wet out. Avoid wrinkling or stretching. Centrifuge (do not wring or twist) to remove as much water as possible. Lay out on a smooth, flat surface and let dry in standard atmosphere of 70° F ± 2° F. and a relative humidity of 65% ± 2%. When dry, remeasure the sample and compute the percentage of shrinkage. Limits are specified for each type of fabric.

Finishing Automobile Fabrics

A great many of these fabrics are flat-finished goods. Finishing procedures are not complicated. Some of the soft-faced goods are given a light napping and are brushed, sheared, and pressed. The clear-finish goods are generally only brushed, sheared, and pressed. Where excessive shrinkage is encountered, adequate precautions must be taken in the drying to stabilize the goods.

Excessive stretching fillingwise on the tenterpins will naturally result in excessive filling shrinkage. Excessive tensions in the dryer are easily overcome by the use of an overfeed. Stretching warpwise due to pressing is a common cause of excessive shrinkage in the warp. This fault may be overcome by eliminating the pressing, substituting decating or semidecating.

Designers who have been accustomed to laying out woolen goods must exercise imagination and caution in laying out automobile fabrics that have a high percentage of synthetic fibers and yarns. These fibers do not felt in the fulling operation, as do woolens. Therefore, they do not shrink as much in fulling. The fabric must be laid out more compactly in the loom. Excessive fulling of fabrics that contain blends of wool and synthetics is more apt to wear out the wool than it is to felt up the fabric.

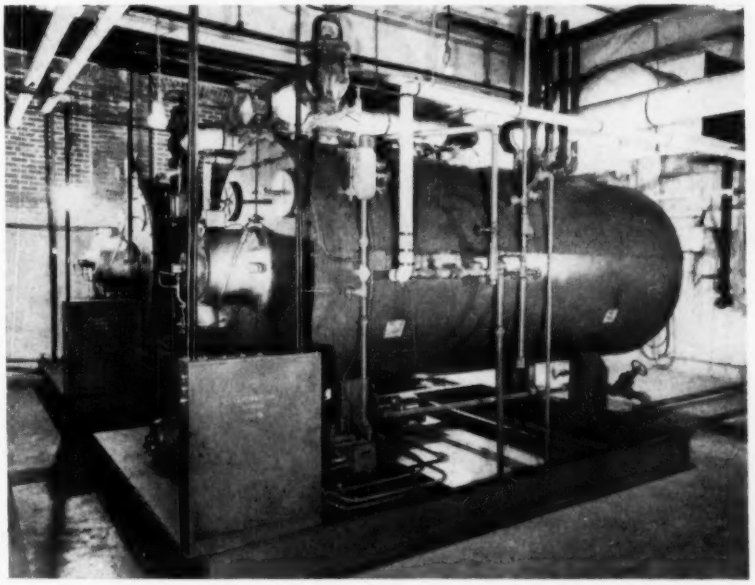
Dyeing Procedure

Every combination of synthetic and natural fibers calls for ingenuity in arriving at techniques that will produce the desired results. Frequently, by adequate laboratory experimentation, it is possible to piece-dye a wide range of combinations of blends of synthetics, or synthetic and natural fibers, which at first consideration might be considered as dyeable only through stock dyeing of the individual fibers.

Combinations of wool and rayon or cotton may be piece-dyed with a combination of direct-dyeing wool colors and fast-to-light, direct-dyeing cotton colors as a union. This method requires temperatures approaching the boiling point in order to fasten the color securely on the wool. After half an hour at this high temperature, the bath is cooled to 180°F. to allow the rayon or cotton dyes to exhaust on the fibers.

In a similar manner, combinations of nylon and/or acetate may be piece-dyed in the presence of wool and/or viscose and cotton. Acetate dyestuffs with the direct-dyeing wool colors and the fast-to-light cotton dyestuffs are used. When it is necessary to stock-dye the individual fibers, the usual chrome colors are applied to wool. Vat, direct, or sulfur colors may be used on the cotton or rayon and acetate dyestuffs or nylon and acetate.

New Boilers Cut STEAM COST at Blue Bird



THESE TWO BOILERS cut the cost of processing and heating by 20% at Blue Bird Silk Mfg. Co., York, Pa. More steam is available, and the boilers respond rapidly to variations in load. The boilers produce 13,800 lb. of steam per hr., 24 hr. per day. They burn No. 6 Bunker C fuel. The 200-hp. Orr & Sembower boilers replaced a coal-fired boiler 2 yr. ago, and maintenance has been negligible over this period.

Get CUT-UNIFORMITY...

with

CUT METERS

on Your Looms

Whether your first concern is to cut down on seconds... to satisfy a hard-to-please market...or to step up the efficiency of a subsequent handling or finishing operation . . . *you've got to get uniform cuts of cloth from your looms.*

The simplest, most effective answers to this need are Veeder-Root Cut Meters, because they're easy to operate . . . can be made to light a light or stop the loom at pre-set woven yardage. Reading is positive and remains until reset by weaver or cut boy. What's more, Veeder-Root Cut Meters are dependable, and have earned the acceptance of leading mills.

Now, whether your particular uniformity problems are on looms, frames, twisters or preparatory equipment, you can count on *"The Name That Counts"* to give you the help of factory-trained Veeder-Root engineers. Just write the nearest Veeder-Root office.

VEEDER-ROOT

INCORPORATED

HARTFORD 2, CONNECTICUT

GREENVILLE, S. C.

"The Name That Counts"

New York 17, N. Y. • Chicago 6, Ill. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

You Must Allow for Bulk In Designing for NEW FIBERS

- **Manufacturers of new fibers sometimes say the material is "bulky" and that mills should "make allowances" for extra bulk in processing**
- **Fabric designers need to know how much allowance. The answer must be in a form easy to handle in computations**
- **The all-fiber system can give the answer if it is used in designing a woven fabric with any new fiber to reproduce an already accepted fabric in any fiber**

By J. B. DICKSON, Textile Div., U. S. Rubber Co.

A FABRIC HAS BEEN FOUND satisfactory for a given end use. It is desired to take advantage of the properties of a different fiber to improve the quality or to reduce the cost of the fabric. What should be the new yarn numbers, ends, and picks to reproduce the structure of the fabric that is to be copied?

Suppose the fabric to be copied was woven with a high-density fiber, such as viscose (fiber density 1.52), and the change is to a low-density fiber, such as nylon (fiber density 1.14). For the same cotton yarn number, the nylon yarns are larger in diameter than the viscose yarns.

If the same yarn numbers, ends, and picks were used for the nylon as were used for the viscose fabric, the cover—the space occupied by yarn—would be greater for nylon than for viscose. The cloth structure would not be the same.

The all-fiber system for calculating the correct cover factors in designing a fabric in another fiber provides for maintaining the original structure. The secret of designing for a change in the kind of fiber is simply to use the same all-fiber cover factors and count (yarn-number) balance for the wanted fabric as in the original sample.

A brief explanation of the meaning of cover factors is given in an accompanying panel. Weight factors are also employed in estimating ounces per square yard. Their use will be explained at another time.

How Calculations Are Made

The relevant data needed for designing the new fabric are figured from the construction of the original sample. These data are the all-fiber warp and filling cover factors and the yarn-number balance.

Since it is customary to estimate weight in ounces per square yard for any new construction, if the warp and filling crimps are not available, an experimental cloth-weight factor for the original sample should also be computed.

The values of the all-fiber cover factors and the yarn-number balance of the sample are then used to compute the new combination of yarn numbers, ends, and picks that will retain these values. The new design can be carried through in the all-fiber system [see TW, Oct. '52, p. 133 and Feb., '53, p. 128], but experience has shown that it is even more convenient to convert from the all-fiber system to (kind of fiber: yarn size unit) of the proposed fabric before proceeding with the calculations.

Two quantities are involved in cover factor: yarn size and yarns per inch. A choice must be made of one or the other. The choice made in the examples is to keep the same diameter of yarn, which means using the same ends and picks. The yarn size is then computed from the cover factors, and the computed yarn size is adjusted to practical mill yarn numbers.

If for mill convenience there is any revision of the computed yarn size, the ends and picks have to be readjusted from the cover factors.

Finally, ounces per square yarn are estimated, with either the crimps or the cloth weight factor being taken into consideration.

From Viscose to Nylon

A plain-weave spun viscose fabric is to be reproduced in spun nylon. The relevant data of the original viscose fabric in the gray are as follows:

	Sample (spun viscose)
Fiber density in g. per c.c., D_1	1.52; $\sqrt{1.52} = 1.233$
Weight, oz. per sq. yd., W_z	5.94
Yarn size, warp, N_w	12s; $\sqrt{12} = 3.464$
Yarn size, filling, N_f	12s; $\sqrt{12} = 3.464$
Ends per inch, n_w	50.5
Picks per inch, n_f	42
Cover factor, all-fiber, warp, K^a_w $K^a_w = n_w \div \sqrt{D_1}\sqrt{N_w}$	11.82
Cover factor, all-fiber, filling, K^a_f $K^a_f = n_f \div \sqrt{D_1}\sqrt{N_f}$	9.83
Count balance, $R_r = \sqrt{N_w} \div \sqrt{N_f}$	1.00
Weight factor, warp, $W_w = n_w \div N_w$	4.21
Weight factor, filling, $W_f = n_f \div N_f$	3.50
Sum of weight factors, $W_w + W_f$	7.71
Empirical cloth-weight factor, W^* $W^* = W_z \div (W_w + W_f)$	0.770
Crimp, percent, warp, c_w	7
Crimp, percent, filling, c_f	16

Notes

1. Subscript 1 refers to the viscose sample, subscript 2 to the wanted nylon fabric.
2. When the same kind of fiber is used in warp and filling, the square roots of the fiber density cancel out.

We now convert the all-fiber cover factor of the sample into the (nylon: cotton count) of the new fabric. (The fiber density of nylon, D_2, is 1.14, and its square root is 1.068).

K_2 (nylon: cotton count)	$= \sqrt{D_2} \times K^a_1$
$K_{w2} = 1.068 \times 11.8$	$= 12.6$
$K_{f2} = 1.068 \times 9.83$	$= 10.5$
Yarn-number balance	$= 1.00$

The next procedure is to compute yarn numbers, ends, and picks, with the above cover factors being used.

Since the yarn-number balance is 1.00, the warp and filling yarns are the same cotton yarn number.

There are two variables in the cover-factor formula, and an infinite number of combinations of yarn sizes and yarns per inch give the same cover factor.

It is logical as a first step to use the same conventional diameter of yarn in the new fabric as in the sample. This procedure amounts to assuming that the yarns per inch in both fabrics will be the same.

Again indicating the sample by subscript 1 and the wanted fabric by subscript 2, we find that

$$N_{w2} = \left(\frac{n_{w1}}{K_{w2}}\right)^2 = \left(\frac{50.5}{12.6}\right)^2$$

$$N_{f2} = 16.1 \text{ (rounded off} = 16\text{s)}$$
$$\sqrt{16} = 4.00$$

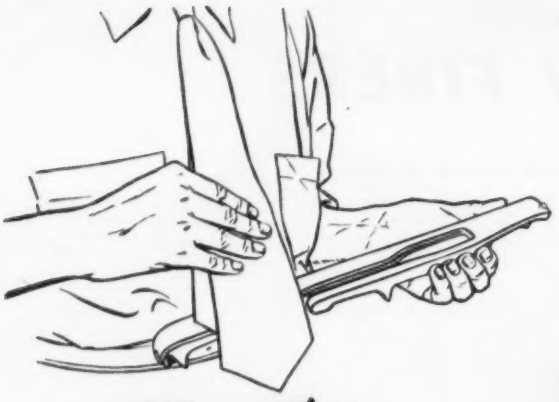
Thus the yarn number is changed from 12s for viscose to 16s for nylon.

The rounded-off figure for cotton number may then be used in computing ends and picks, with the same cover factors being retained.

$$n_w = K_w \times \sqrt{N_w}$$
$$n_w = 12.6 \times 4.00 = 50.4 \text{ (round off to } 50.5)$$
$$n_f = 10.5 \times 4.00 = 42.0$$

In this case the rounding-off has been too slight to change the ends and picks. The construction of the nylon fabric will thus be 16s yarn, with 50½ ends and 42 picks.

Let us suppose, however, that 16s nylon yarn is not available in your mill, and 18s is the nearest available yarn number. We first note that the square root of 18 is 4.243. Then we see that the ends and picks are:



Try This on your Necktie!

G&K Orange Line BOXMASTER Leathers do not catch or discolor the finest filament rayon

The edges are *smooth* — and they stay that way. No waxes or fillers are needed. Just rub lightly with a water-dampened cloth. Easy, isn't it!

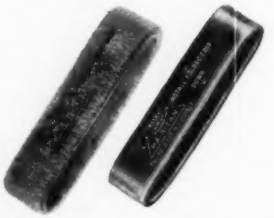
BOXMASTER Binder and Box Plate Leathers are made of G&K Hairitan® leather — choice selected hides, specially tanned and treated for perfect boxing. Their tough resiliency "takes" the shuttle with cushion effect as it enters the box . . . their frictional surface brakes the shuttle evenly to a stop . . . their dense fibres form the smooth, *smooth* edges on which the finest filaments will not catch.

A large stock and hundreds of patterns are available to meet your needs for special shapes. Order through your local Distributor and specify G&K BOXMASTER HAIRITAN LEATHERS for perfect boxing.

FREE CATALOG

presents the complete Orange Line of Textile Leathers for weaving on Draper and Crompton & Knowles Looms—also Aprons and Tapes.

Pickmaster® Pickers do not bounce the shuttle, or cause the shuttle spur to heat up. Assure smooth shuttle flight and accurate boxing.



Endless Check Straps provide controlled cushioning action for the picker stick. They are positioned perfectly for each pick, and conform to the angle of the picker stick at all points.

Condenser Tapes, Comb and Gill Box Aprons, and Grakorub Rub Roll Aprons are producing uniform rovings with less down-time. Made of selected G&K leather specially tanned and accurately fabricated in standard and special sizes.

G&K Orange® Line Loom Leathers

1. STOP KINKY FILLING (No shuttle bounce)
2. REDUCE BANG-OFF (Perfect boxing)
3. CUT SHUTTLE COST (No hot spurs)
4. INCREASE PROFITS

MEMO: If your problem is power transmission, see your G&K Belting Distributor for:

HEART OAK **top grade oak tannage**
RESEARCH® **premium quality special tannage**
SPARTAN® **combination tannage: resists moisture, fumes**

WRITE FOR FREE BELTING MANUAL 101

GRATON AND KNIGHT®

GRATON & KNIGHT COMPANY
Established 1851
Worcester 4, Mass.

DIXIE

DIXIE LEATHER CORPORATION
Graton & Knight Company Affiliate
Albany, Georgia

T-2

$$n_w = 12.6 \times 4.243 = 53.5$$
$$n_f = 10.5 \times 4.243 = 44.6 \text{ (round off to 44.5)}$$

Weight in ounces per square yard for the 18s nylon fabric now may be estimated by either of two equations. First, computing warp and filling weight factors, we see that

$$W_w = n_w \div N_w = 53.5 \div 18 = 2.97$$
$$W_f = n_f \div N_f = 44.5 \div 18 = 2.47$$
$$W_w + W_f = 5.44$$

Then, employing the exact equation for ounces per square yard, we get an answer of 4.18 oz. per sq. yd.:

$$W_z = 0.686\,[W_w\,(1 + c_w) + W_f\,(1 + c_f)]$$
$$= 0.686\,[2.97 \times 1.16 + 2.47 \times 1.07]$$
$$= 4.18$$

[In this equation, c is crimp and 0.686 is the value of a numerical constant when yarn size is in the cotton system.]

Or, by the second method, employing the cloth weight factor, we get approximately the same answer:

$$W_z = W^*\,(W_w + W_f)$$
$$= 0.77 \times 5.44$$
$$= 4.19$$

We now have enough data to proceed with the designing of the new fabric. The information on the gray construction of the nylon fabric made of 18s yarn is as follows:

	Wanted nylon fabric
Estimated weight, oz. per sq. yd., W_z	4.2
Yarn size, warp, N_w	18s
Yarn size, filling, N_f	18s
Ends per inch, n_w	53.5
Picks per inch, n_f	44.5
Crimp, percent, warp, c_w	16
Crimp, percent, filling, c_f	7

Calculating in Deniers

As an illustration of how yarn sizes are handled in direct yarn-numbering units, take a plain-weave filament-acetate fabric that we want to convert to filament nylon. The yarn size is in denier. The relevant data on the finished acetate sample are:

	Sample (filament acetate)
Fiber density in g. per c.c., D_1	1.33; $\sqrt{1.33} = 1.153$
Weight, oz. per sq. yd., W_z	2.3
Yarn size, denier, warp, H_w	100; $\sqrt{100} = 10.00$
Yarn size, denier, filling, H_f	100; $\sqrt{100} = 10.00$
Ends per inch, n_w	82
Picks per inch, n_f	88
Cover factor, all-fiber, warp, K^a_w $K^a_w = n_w \sqrt{H_w} \div \sqrt{D}$	763
Cover factor, all-fiber, filling, K^a_f $K^a_f = n_f \sqrt{H_f} \div \sqrt{D}$	711
Count balance, $R_r = \sqrt{H_f} \div \sqrt{H_w}$	1.00
Weight factor, warp, $W_w = n_w \times H_w$	8800
Weight factor, filling, $W_f = n_f \times H_f$	8200
Sum of weight factors, $W_w + W_f$	17,000
Cloth-weight factor, W^* $W^* = W_z \div (W_w + W_f)$	0.000135
Crimp	not available

Converting the cover factors into the (nylon: denier) system, we find that

$$\text{(nylon: denier)}\ K_w = 1.068 \times 763$$
$$K_w = 815$$
$$K_f = 1.068 \times 711$$
$$K_f = 759$$

Assuming as before the same number of ends and picks and the same conventional yarn diameters, we find the warp-yarn denier to be

$$H_{w^2} = (K_w \div n_w)^2$$
$$H_{w^2} = (815 \div 88)^2$$
$$H_{w^2} = 85.7$$

The filling denier, H_f, is the same as that of the warp, 85.7, since the yarn-number balance is 1.00.

In the case of filament yarns, the choice of actual size is more limited than in the case of spun yarns. Available filament nylon yarns in the 85-den. yarn-number range are 70 and 100 den. with 85.7 almost midway between. We arbitrarily adopt the 100-den. yarn.

Ends and picks per inch for the nylon fabric are:

$$n = K \div \sqrt{H}$$
$$n_w = 815 \div \sqrt{100} = 81.5 \text{ ends}$$
$$n_f = 759 \div \sqrt{100} = 75.9 \text{ (round off to 76) picks}$$

The weight may then be estimated from the cloth weight factor, W^*.

$$W_z = W^*\,(W_w + W_f) = W^*\,(n_w H_w + n_f H_f)$$
$$= 0.000135\,(81.5 \times 100 + 76 \times 100)$$
$$= 2.1 \text{ oz. per sq. yd.}$$

(Continued on page 254)

How You Can Use Fabric Cover Factors

The cover of a fabric, expressed in formulas as K, is the amount of space actually covered by the yarns. It is not the sum of the warp and filling cover factors, however, but is less. In fabric designing, cover is one of the most important fabric characteristics.

The space covered, for example, by the warp yarns in a fabric depends on the number of ends per inch. Employing cotton yarn in an illustrative example, we figure its cover factor as the conventional diameter, d, of a cotton yarn in inches (0.0358). This number is divided by the square root of the yarn number, to give us $0.0358 \div \sqrt{N}$. N stands for the reciprocal-system yarn number you are working with.

If the number of yarns per inch in the fabric is expressed as n, the space covered in inches equals the number of yarns per inch times the diameter of the yarn. Thus we get

$$n \times \frac{0.0358}{\sqrt{N}} \text{ (for cotton yarns)}$$

For simplicity in computations, Frederick Peirce omitted the numerical constant (the yarn diameter factor, k_d) and defined the cover factor, K, as

$$\text{warp cover factor, } K_w = \frac{\text{number ends per inch}}{\sqrt{\text{warp yarn number}}} = \frac{n_w}{\sqrt{N_w}}$$

$$\text{filling cover factor, } K_f = \frac{\text{number of picks per inch}}{\sqrt{\text{filling yarn number}}} = \frac{n_f}{\sqrt{N_f}}$$

The formula is the same mathematically for cover factors as for twist multipliers. In other words, twist has no effect on cover except as it affects the yarn number itself.

Compact Cover Factors

The numerical value of the compact cover factor, K*, provides a conventional upper limit to the cover factor. The compact cover factor is the value when the yarns lie side by side and touch one another.

The cover is "compact" if the yarns per inch multiplied by the yarn diameter equals 1 in. or, as in the first equation above, if

$$1 \text{ in.} = \frac{n \times 0.0358}{\sqrt{N}}, \quad \text{therefore}$$

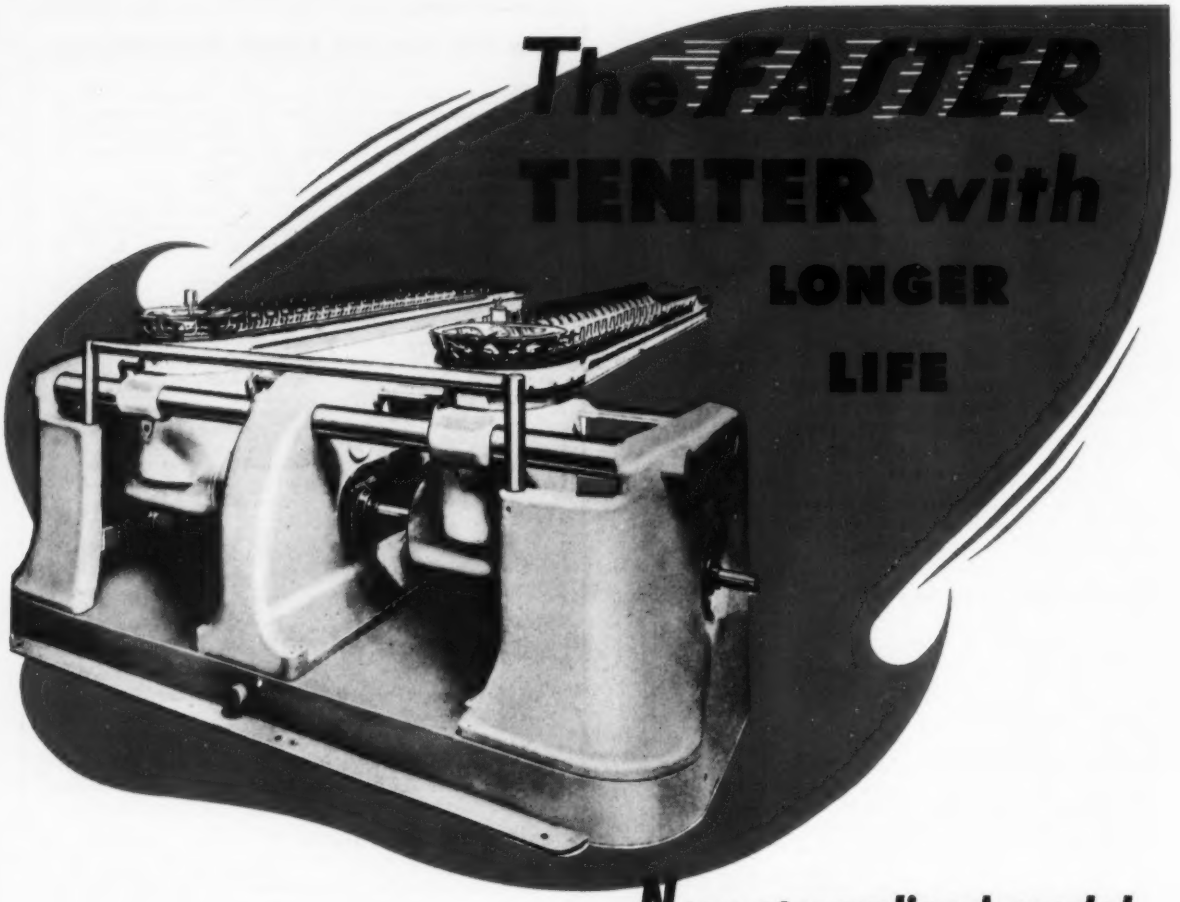
$$\frac{1}{0.0358} = \frac{n}{\sqrt{N}} = K^* = 27.9 \text{ (cotton: cotton count)}$$

This article discusses "design for change in kind of fiber," and for this purpose all-fiber cover factors are used. When D represents fiber density in grams per cubic centimeter (not to be confused with the bulk density of the yarn), we can define the all-fiber cover factor as:

$$K^a = \frac{n}{\sqrt{D}\sqrt{N}} \text{ (for the cotton system)}$$

$$K^a = \frac{n \times \sqrt{H}}{\sqrt{D}} \text{ (for the denier system)}$$

The FABRIC TENTER with LONGER LIFE



. . . New streamlined model developed by Winsor & Jerauld — specialists since 1900

The famous dependability and high-speed capability of Winsor & Jerauld tenters are jealously retained in the new model, which offers many important and carefully engineered advances, including:

1. Avoidance of lubricant spattering—attained by total enclosure of main driving gears and silent chain, by efficient guards on the entering and delivery end of the frame, and by patented enclosed sprocket-teeth holes in the tenter links themselves.

2. Saving of precious floor space by location of drive in center, as shown in the above photograph

3. Sturdy design of drive with mounting on internally-braced welded steel bed plate to insure permanent alignment of all parts.

4. Ample provision for endwise rail expansion caused by heat, an engineering improvement that prevents misalignment of bearings or gears, hitherto a common cause of mechanical failure in tenters.

Our service goes beyond the machine! During 53 years, we have successfully aided our customers in solving tentering problems on fabrics ranging from simple cotton print cloths to nylon marquisettes.

Have you a tentering problem? Write our experienced staff of tenter-engineering specialists for recommendations, involving no obligation.

Winsor & Jerauld

MANUFACTURING COMPANY, INC.

Main Office
1249 Elm Street

Southern Division
518 Arcade Avenue

WORLD POSITION OF TEXTILES IN 1952

THIS TABLE is based upon the most recent data available received from McGraw-Hill World News correspondents in the principal countries of the world. The data are for 1952 except in those instances where late figures were not available. Metric units have been converted to English units, and effort has been made to indicate by notation where other than the North American custom is followed. Unless otherwise noted, "yards" are linear yards.

	The Americas							Oceania	
	Argentina	Brazil	Canada	Dominican Republic	Mexico	Peru	United States	Australia	New Zealand
COTTON YARN									
Spindles (mil.)	N. A.	3.6	1.1	0.01	1.1	0.2	23.0	0.2	—
Production (mil. lb.)	180.6[1]	390.0	158.0	2.00	90.0	3.5	4,479.0	30.3	—
Imports (mil. lb.)	7.7[O]	—	5.9	—	—	0.3[1]	0.2	5.36	2.21
Exports (mil. lb.)	D	0.2	0.05	—	0.45	0.4	28.2	0.07	—
COTTON CLOTH									
Looms (thous.)	15.4[1]	100.0	19.0	0.29	37.5	6.3	493.4	2.8	—
Production (mil. yd.)	180.6*[1]	1,300.0	254.0	1.52	87.0	83.0	9,291.0	31.0[S]	—
Imports (mil. yd.)	9.4*[1]	—	584.0*	15.0	3.0	1.7[1]	28.7[S]	152.4[S]	53.0[S1]
Exports (mil. yd.)	D	0.3	5.8	—	10.1	0.1	514.0[S]	1.9[S]	—
WOOL YARN									
Spindles (thous.)	760.0[1]	90.0	144.0	—	130.0	19.0	3,260.6	460.6	71.0[1]
Production (mil. lb.)	99.0[1]	18.0	12.0	—	9.5	3.5	478.8	28.0	6.5[1]
Imports (mil. lb.)	3.5[O]	0.6	1.9	D	N. A.	0.06[1]	2.3	0.09	2.1[1]
Exports (mil. lb.)	D	—	—	—	D	D	0.3	0.11	—
WOOL CLOTH									
Looms (thous.)	10.0[1]	3.5	2.9	—	2.0	19.0	37.5	6.3	0.6[1]
Production (mil. yd.)	250.0[1]	15.0[S]	23.0	—	9.0	0.01	346.0	23.5[S]	2.6[1]
Imports (mil. yd.)	0.2*[1]	0.1*	9.4*	—	N. A.	0.07[1]	23.3[S]	2.5[S]	8.0[1]
Exports (mil. yd.)	N. A.	—	—	—	D	D	3.6[S]	0.1[S]	—
SYNTHETICS (Filament)									
Production (mil. lb.)	17.9[1]	47.0[M]	40.0	—	20.9	1.4[1]	1,040.8	N. A.	—
Imports (mil. lb.)	0.3[O]	1.4[M]	2.7	—	4.0[M]	0.6	1.0	10.45[M]	0.9[M1]
Exports (mil. lb.)	—	N. A.	2.4	—	—	D	15.5	0.15[M]	—
SYNTHETICS (Staple)									
Production (mil. lb.)	—	47.0[M]	25.0	—	26.0	—	355.8	N. A.	—
Imports (mil. lb.)	D	1.4[M]	3.4	0.05	4.0[M]	—	69.0	10.45[M]	0.9[M1]
Exports (mil. lb.)	—	N. A.	—	—	—	—	4.3	0.15[M]	—
WOVEN SYNTHETICS									
Production (mil. yd.)	15.1*[1]	18.0	95.0	D	50.0	0.13	2,142.0	11.5[SB]	—
Imports (mil. yd.)	N. A.	1.4[M]	5.5*	—	N. A.	0.12[1]	0.2*	49.2[S]	25.0
Exports (mil. yd.)	—	N. A.	1.0	—	N. A.	D	218.0[S]	0.6[S]	—

	Middle East	Europe						Asia	
	Egypt	Belgium	France	Great Britain	Italy	Spain	Sweden	India	Japan
COTTON YARN									
Spindles (mil.)	0.6[1]	2.2	7.7	34.0	5.8	1.7	0.6	11.4	7.5
Production (mil. lb.)	116.2[1]	175.5	560.0	663.0	395.4	134.2	51.0	1,420.0	714.0
Imports (mil. lb.)	0.25[1]	2.0	77.0	7.7	0.4	0.04[1]	4.8	2.1	D
Exports (mil. lb.)	21.67[1]	48.9	162.8	44.7	47.4	0.41[1]	0.4	23.2	30.8
COTTON CLOTH									
Looms (thous.)	62.3[1]	35.0	180.0	378.6	138.1	65.0	9.5	203.8	297.0
Production (mil. yd.)	208.4[1]	103.1*	424.6*	1,692.8	255.8*	134.2*	50.5*	4,522.8	2,200.0[S]
Imports (mil. yd.)	6.0*[1]	3.9*	17.6*	191.7[S]	2.5*	0.1*[1]	9.7*	4.9	D
Exports (mil. yd.)	D	35.5*	123.6*	709.3[S]	38.2*	0.3*[1]	2.0*	545.6	677.8[S]
WOOL YARN									
Spindles (thous.)	42.0[1]	755.0	2,700.0	3,000.0	1,530.0	690.7	258.0	102.9	1,049.0
Production (mil. lb.)	N. A.	58.4	238.0	426.8	218.3	26.3	22.8	12.8	147.8
Imports (mil. lb.)	0.6[1]	2.0	0.4	1.4	0.3	—	4.2	D	D
Exports (mil. lb.)	—	15.0	20.9	24.6	1.5	0.01[1]	0.3	1.76	1.2
WOOL CLOTH									
Looms (thous.)	0.75[1]	11.0	42.0	61.0	18.7	21.3	4.5	1.9[1]	20.3
Production (mil. yd.)	2.28*[1]	24.0*	160.5*	369.9[S]	108.7*	26.3*	24.9*	5.6	150.0[S]
Imports (mil. yd.)	4.37*[1]	3.6*	2.0*	6.7[S]	1.1*	0.02*[1]	4.0*	1.5	1.4[S]
Exports (mil. yd.)	D	4.0*	9.2*	97.9[S]	19.1*	1.85*[1]	2.2*	N. A.	1.0[S]
SYNTHETICS (Filament)									
Production (mil. lb.)	5.1[1]	15.8	93.5	154.5	93.8	25.3	7.9	9.6[1]	140.1
Imports (mil. lb.)	5.7[1]	2.8	0.7	2.3	1.8	—	3.1	48.5[1]	D
Exports (mil. lb.)	—	9.9	19.8	17.3	39.2	—	—	—	21.7
SYNTHETICS (Staple)									
Production (mil. lb.)	2.6[1]	25.3	73.6	122.4	85.9	45.0	18.0	—	260.0
Imports (mil. lb.)	5.4[1]	6.4	0.6	1.1	3.8	—	1.9	36.5[X]	D
Exports (mil. lb.)	—	19.9	11.6	21.4	13.3	—	8.8	—	1.6
WOVEN SYNTHETICS									
Production (mil. yd.)	6.5*[1]	7.8*	48.4*[F]	586.4	45.4*	N. A.	10.8*	163.5[1]	751.5[S]
Imports (mil. yd.)	2.2*[1]	9.0*	0.7*[F]	27.7[S]	0.4*	N. A.	1.5*	2.45[1]	D
Exports (mil. yd.)	—	4.0*	17.6*[F]	152.6[S]	23.1*	N. A.	—	7.95[1]	313.2[S]

*Million lb. —None. [B]Includes blends. [D]Insignificant. [E]Estimated. [1]1951 total.
[M]Filament and staple. [O]1950 total. [S]Million sq. yd. [W]Worsted. [X]Apr. 1951 to Mar. 1952.

Profit leaks in glazed fabrics

BRYANT CHEMICAL CORPORATION
N. Quincy 71, Mass.

☐ Send free trial gallon of Sanol 50.

I am also interested in formulae for:
☐ Permanent glazing. ☐ Embossing.
☐ Schreinering. ☐ Shrink resisting.

SIGNED

COMPANY

STREET

CITY ZONE STATE

You can eliminate those costly pluck marks (*and resin build-up on rolls*) by just adding Sanol 50 Finishing Oil to your resins. For good measure Sanol 50 is a lubricant that prevents friction burns, a softener that imparts a pleasing hand to embossed or dyed fabrics, a wetting and rewetting agent for shrink resistant finishes *and* moreover it does not discolor nor develop a rancid odor. The price is low. Samples are free. Send the coupon to BRYANT CHEMICAL CORPORATION, N. QUINCY 71, MASS. or BOX 2301, SPARTANBURG, S. C.

Brytex
SANOL 50

How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

How To Establish a POLICY— And Make It Work

► **Policy is not only top management's job; it's also the responsibility of supervisors. Each person should have a thorough understanding of the policy, know why it was established, and help carry it out to the best of his ability.**

By FRANK T. DE VYVER
Vice President and Director of Personnel Relations, Erwin Mills, Inc.

TEAMWORK IS, of course, essential to good production in every organization. It is so important that hundreds of articles are written about teamwork between labor and management; ministers preach many sermons about cooperation; and the many management services print posters, booklets, and wall slogans about the need for cooperation. All of this is important, to be sure.

Emphasis, however, must also be put on teamwork within the management group. The owners—that is, the stockholders—hire the management group to make profits for them. They recognize the social needs for good employee relations as well as the profit possibilities of such good relations. But the owners also have the right to expect good internal relations in the group of men they have placed in charge of their business.

The management group, of which the supervisors are a most important part, operate according to general policies. Furthermore, there are some fundamental principles concerning policies that we in the management group must follow if we are to give our best service to the stockholders who own our business. In a section listed in the table of contents as "Pointers for Supervisors," this article should perhaps be addressed only to supervisors.

What Is Policy?

The questions of policy formation and policy following, however, involve not only the foreman but also everyone in the management organization, both line and staff. Each reader can recall troubles that have arisen in his department because he didn't know what policy to follow or because his assistant didn't follow the policy laid down. The foreman might even remember cases when he didn't follow policy or when he grumbled to a subordinate about a policy that he was supposed to support. Such actions create serious management problems.

A policy, according to the American College Dictionary, is "a definite course of action adopted as expedient or from other considerations." In management usage a policy can be considered as a principle under which members of management can make detailed decisions without the necessity of delving into all of the arguments for and against the immediate action.

For example, if a concern has a policy against advertising in trade journals, each appeal for such advertising does not have to be studied with reference to the individual merits of the journal. Or, if management has determined that, in accordance with the law, no discrimination shall be practiced because of membership or nonmembership in a union, a foreman preparing to discipline does not need to ask himself what effect that discipline will have upon union relations. The broad principle or policy has been set. The supervisor makes his decision within that policy.

These policies in business are what make a smooth-running organization. If there are no policies, each decision becomes a major problem or perhaps even a crisis. If the established policies are not followed, trouble is certain. And if any member of the management group does not loyally accept the policies of his company or criticizes them before his subordinates, the whole management team in the eyes of the workers will be discredited.

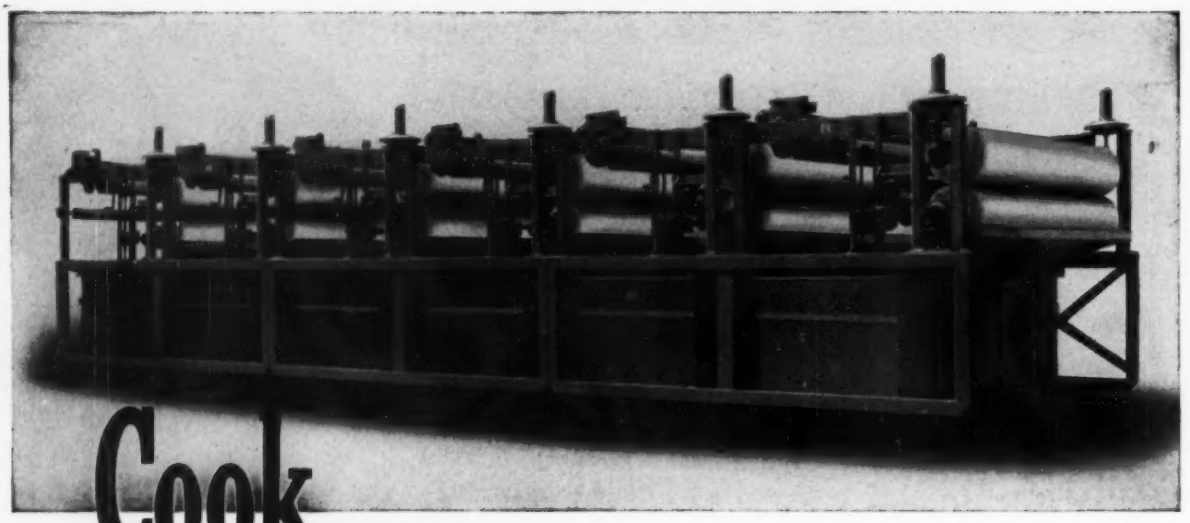
How To Make a Policy

Making policies is not easy. There are procedures that can be followed, of course, but no matter how smooth the mechanics, there are bound to be time-consuming thinking and even more time-consuming meetings. Even when the decision has been made there is sometimes the additional problem of writing it down clearly.

Perhaps the simplest way to formulate a policy is by means of a one-man decision based only upon that man's own thinking about the problem. Unfortunately, many management people make policy in that way. Such a method requires none of the time-consuming conferences with others in the organization. A supervisor in his own department doesn't have the bother of asking his assistants what they think; the higher executives don't have the trouble of meeting with the supervisors to get their ideas on a subject. The supervisor or executive simply makes up his mind by whatever process he wishes and then pronounces that decision as a policy.

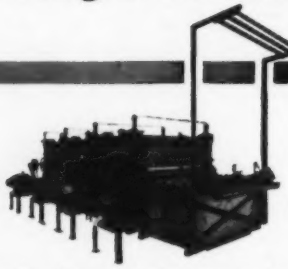
On the surface such methods of policy formation may seem to be perfect examples of the forthright action that seems so often to lead to business success. For the moment there is a saving in time, and junior executives or supervisors can go about their work without wasting time sitting around discussing a problem. No business man doubts the necessity for quick decisions on many matters. I have heard it said many times that you can't run a business by committees.

(*Continued on page 188*)



Cook P&N 100" face WASHER

allows single or double stranding without rethreading

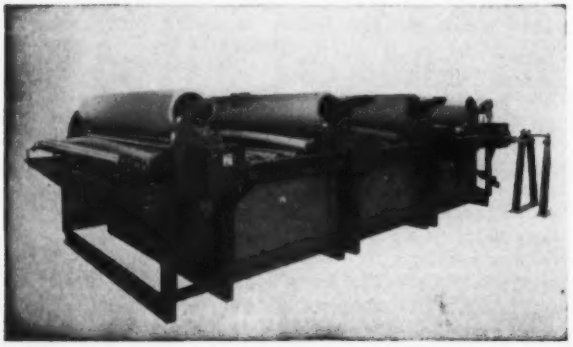


Cook Open Width Washer 8812–1 for highest efficiency with minimum water consumption. Strong stainless steel construction. Accessible. Easy to clean boxes.

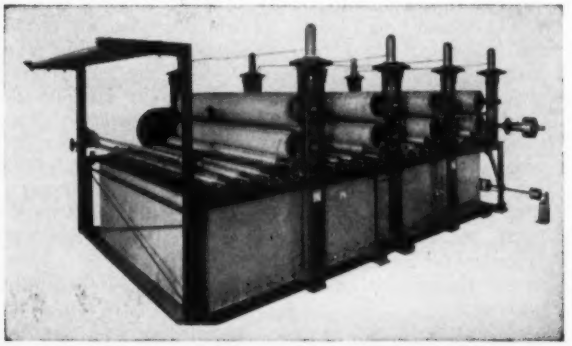
This Cook style D 100" face Washer 5786–1 is designed for rigidity and convenience of operation. Fabricated steel throughout and supported by I beams running across the machine making the complete machine one integral unit. Tanks are of stainless steel designed to be removed from the machine without disassembling any other part. Guide rolls are skyed for more complete washing. Preceding each nip is a single and a double expander preceded by an adjustable roll which allows single or double stranding without rethreading.

All Cook machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified.

Your request for information will receive prompt attention.



COOK 100" Face Washer 8856-1 is strong without excessive weight. Tanks made to fit your usage. Completely equipped with self-aligning ball bearings. Weight and lever, pneumatic or micro set pressure available. Side shaft drive shown; others are arranged with individual nip drive. Made in all widths.



COOK Crabbing Machine 6401-2 or Washer with stainless steel tanks supported by rigid frame of stainless steel which also mounts the guide rolls, squeeze rolls, tension device and roll-up. Two to ten tank machines for widths of fabrics. Each tank has four immersion rolls running in rubber or graphalloy bearings.

COOK-P & N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass.

Exploring

The Textile Community

A FARM PROGRAM Pays Off In Better Community Relations

► Pastures and dairy herds may seem remote from the normal business of a textile mill. But in a region where business has a direct interest in a prosperous agriculture, a progressive company has set an example to its farm neighbors that has been profitable for all concerned.

By MILDRED BARNWELL ANDREWS

LAST TIME I WENT TO AVONDALE MILLS at Sylacauga, Ala., I was delighted with the lobby display in the main office. Against a backdrop of lovely plaids and denims was a charming mannequin dressed in blue jeans, gingham skirt, cowboy hat, and boots. Wood cut-outs proclaimed "Avondale Fabrics for Alabama's Cattle Country." In this way the mill is linking its textile production and its sponsored agricultural-diversification program into a community economic factor.

The reception desk told me that all the members of the mill's executive staff I had come to see were out of town for the day. Craig Smith was gone. Hugh Comer was gone. And guess where? They were down in the lower part of the state attending a farm program! Such interest in their state's and their neighbors' welfare is not unusual for the Avondale folks; they are working at it all the time. But a textile company that continuously puts out time and effort to inspire its neighbors to better farming programs through encouragement and example is rare in the industry.

The Comer family's interests in a better state through better farm programs is nothing new. They have joined in the "More Trees for Alabama" movement and the Cotton Improvement Contests; and for years Hugh Comer has told audiences across the nation about their goal of "June Grazing in January" and the importance of cattle and dairy herds in the South's balanced economic program.

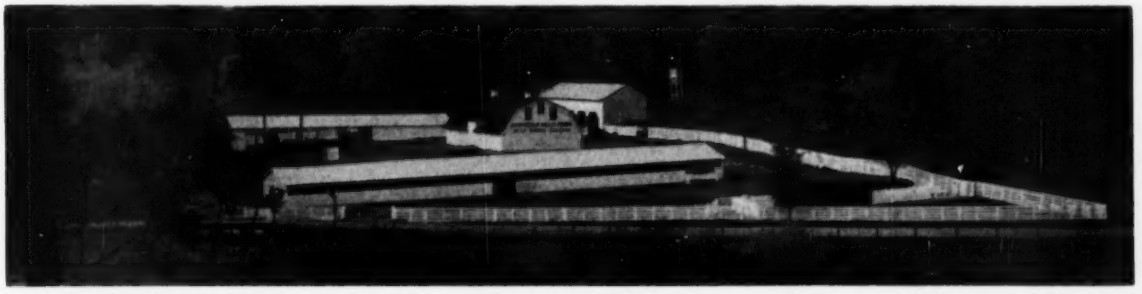
The South, once dedicated to row-crop farming only, has learned through trial and error that the combination of farming, forestry, and cattle is a far more profitable and more satisfactory way of agricultural life. In this effort in Alabama, Avondale Mills has taken a responsible lead. Strange for a mill to guide in a farming program? Not at all—not down where mills have a direct interest in the development of a prosperous agricultural economy as a matter of good business and good community relations.

Avondale's program in sponsoring farm diversification plans has been carried out with little outlay of new money. It had the land and it had the credit. And according to Emmett Warren, vice president who looks after the farm operations, the company has done nothing the average small farmer cannot do.

The plan, first, was to put the land into pasture production. Then as the lands were sufficiently in pasturage, cattle were added. As the herds grew and years went by, cattle were sold annually to clear actual expenses of the farm operation. In the meantime, by careful mowing of pasturelands, enough vegetation was dropped back on the soil for fertilization and improvement.

The initial herd was made up of native or common-grade cows. With the long-range improvement plan, good registered bulls were purchased; and replacements with better strains were made as rapidly as possible. Of the calves from the cross-breeding, Avondale kept the heifers, bred them to the improved strain of bulls, and from year to year raised the standard of the herd. It was a slow program that required patience and resourcefulness.

(*Continued on page 184*)



THIS MODERN FARM at Sycamore, Ala., is stocked with high-grade beef cattle. A long-range program has raised the quality of the herds on Avondale farms and has helped neighboring farmers improve their own lands and cattle.

ALEMITE OIL-MIST

saved $2400 first year

...extended bearing life from 20 weeks to one year and four months

Textile mill breaks bottle-neck, cuts Down-Time, ups Production

Bearing temperatures on an important blower were running 200°. Bearings burned out frequently. Production losses totalled $1000 with each failure. Mill output lagged with down-time for repairs. Here was a bottle-neck that had to be broken! Management turned to Alemite lubrication. Installed an OIL-MIST unit costing little more than a hundred dollars. *Result:* Bearings are still operating with no failures to date—after one year and four months. $2400 has been saved, down-time has been eliminated and production increased!

Compare all these OIL-MIST advantages with ordinary methods!

- Reduces bearing temperatures as much as 20%
- Continuous, uniform lubrication of all types of bearings
- Air pressure seals bearings against dirt
- Reduces oil consumption—up to 90%
- Prevents product spoilage
- Eliminates guesswork—each bearing picks up as much OIL-MIST as it needs
- Reduces starting and running torque.

Facts prove this *"Friction Fighter"* most efficient, continuous, fully automatic lubrication system

All industry looks to Alemite for the latest, most advanced lubrication methods. OIL-MIST, Alemite's great lubrication development, is the famed system that *atomizes* oil into mist—distributes it through tubing to bearings—bathes all bearing surfaces with a cool film of clean, fresh oil. Here is the system that simplifies and materially cuts the cost of machinery lubrication. With no moving parts, the lubricator is the last word in efficiency.

Job Proved and thoroughly tested in hundreds of applications in every phase of industry, OIL-MIST uniformly maintains oil film on plain and anti-friction bearings, gears and chains, despite variations in load, temperature or speed. Don't you owe it to *your* business to learn all about Alemite OIL-MIST—*today?*

ALEMITE OIL-MIST Lubricates All Types of Mechanisms

Alemite OIL-MIST Lubrication

A PRODUCT OF SW STEWART-WARNER

Get the facts NOW!

Alemite, Division of Stewart-Warner, Dept. J-33
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please send me a FREE copy of your new and complete OIL-MIST catalog.

☐ Please have your Alemite Lubrication Representative arrange a desk-top demonstration of OIL-MIST. This entails no cost or obligation on my part.

My name .....

Title .....

Company .....

Street .....

City ..... State .....

TEXTILE Equipment NEWS

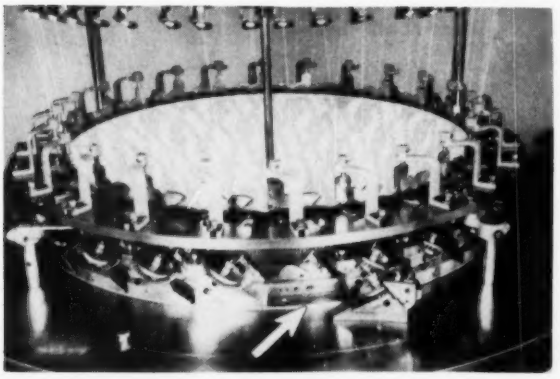
Jersey Mesh Machine Makes Jacquard Eyelet Fabric

Various eyelet and mesh constructions for basque shirts are possible on a new knitting machine that is now generally available from H. Brinton Co., Kensington Ave. and M St., Philadelphia 24, Pa.

The machine is called the Merweel-Eye, Style RMWE. It has a 24-in. dia., 24-feed, 18-cut sinker-top revolving cylinder and produces eyelet fabric in both plain and jacquard design.

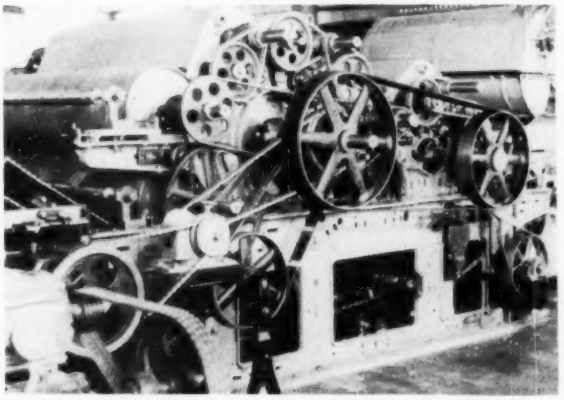
The knitter has an individual-motor drive, a 48-end bobbin table, and an electric stop-motion system. Standard equipment for pattern work includes 24 sectional wheels.

Circle T-1 on Reader-Service Card



EYELET JERSEY FABRIC of various designs can be made on this new Brinton machine. Close-up view of the knitting area, showing one section removed (arrow), makes clear the design-wheel position, fabric, and carrier arrangement.

High-Speed Garnett Processes Up to 575 Lb. an Hr.



A 50 TO 100% INCREASE IN PRODUCTION with as good or better carding than before is the big talking point for this new garnett designed for processing cotton, jute, and synthetic fibers.

A simplified garnett for high-speed processing of cotton, jute, and synthetic fibers has been developed by James Hunter Machine Co., North Adams, Mass. Known as the Model 40, the new garnett is designed to give increased production and reduced operating and maintenance costs.

Production as high as 575 lb. on some fibers, with quality carding, is reported.

Ordinarily, garnetts have about 30 rolls and cylinders. The Model 40 has 18. Worker and stripper rolls have been reduced in number to one each per cylinder. As a result, there are fewer rolls to spindle out and reclothe, and fewer bearings and poppets to replace.

Cylinders are "balanced." And with balanced rolls revolving on ball bearings, the new garnett eliminates gauging troubles. Feed rolls are equipped with Oilite bushings that require no lubrication.

High production is obtained from a larger-diameter worker, a stripper, and an additional high-speed fancy on the finishing cylinder—all revolving opposite to the main cylinder. The three high-speed fancies provide the extra

carding necessary to increase production satisfactorily without hurting quality.

Middle Doffer Is Overhead

The center doffer is raised above the two main cylinders so that stock is carried only one-third the circumference of the doffer instead of two-thirds as on standard machines. The position of the doffer above the main cylinders eliminates draft below the web, which feature in turn means less stock dropped in the transfer from one main cylinder to another.

The overhead location of the middle doffer also allows for quick removal for reclothing purposes. With other machines, it is also necessary to remove the breaker section and feed.

In addition to an increase of 50 to 100% in production with as good or better carding, a major advance of the new garnett is its ability to handle low-grade and short-fiber stock. Short-fiber stock is successfully handled through the elimination of slow-speed worker cylinders, which tend to tear shorter fibers. Tests to date show it is possible to run cardroom sweeps, picker waste, fly, motes, and linters.

A slightly modified version, Model 40-S, is designed for synthetic fibers, such as Dacron, nylon, Orlon, rayon, and Vicara.

Circle T-2 on Reader-Service Card

Direct Titrations Possible in Multipurpose Kjeldahl Flask

TITRATING, ACETYLATING, AND REFLUXING can all be done in a single Kjeldahl flask made convertible by a standard-taper joint.

A new 500-ml. Kjeldahl flask with a removable neck has been announced by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. Titrations can now be made right in the bulb of the digestion flask.

Other uses of the two-piece flask with its standard-taper joint are:

1. By removing the neck and inserting a refluxing condenser, chemists can reflux before actual digestion.
2. Acetylations can be made right in the digestion flask.
3. Powdered or viscous samples can be weighed and transferred directly from the balance tare to the bulb of the flask without wrapping the sample in filter paper to prevent adherence.

A further textile application includes testing for copper in mildewproofed fabric (wet digestion in sulfuric-nitric acid, neutralization, adjustment to pH 4, and determination either iodometrically—titrating directly in the new flask—or spectrophotometrically).

Circle T-3 on Reader-Service Card

Flyers Dynamically Tested For Balance In 10 Sec.

FLYER-BALANCING MACHINE has an electrically driven turntable head, a calibrated reading panel, and brakes. Once started up, the flyer reveals its direction of unbalance as the brake is applied. The area causing the unbalance is then marked on the flyer with the aid of the angular degrees engraved on the head of the tester. Corrections in balance are made by lightly bending the flyer and testing again until perfect balance is obtained.

The unit is manufactured by Hofmann Bros., Darmstadt, West Germany, and is available from Roman Hofmann, 4 Labornum Road, Davyhulme, Manchester, England.

Circle T-4 on Reader-Service Card

SONOCO

Precision Paper Products

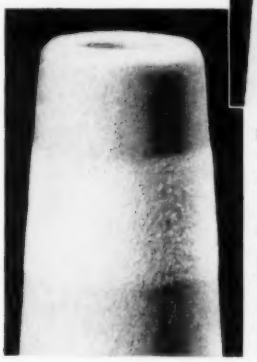
Knitting Arts Exhibition

Atlantic City
April 27-May 1,
1953
Booths 373 & 374

. . . A RIGHT CONE—
A RIGHT SURFACE—

FOR EVERY TYPE YARN!

ABOVE—Sonoco's 3"51' Cone, developed to increase package size in winding synthetic yarns. Note lacquer tip for identification, which is available on all Sonoco cones.



In addition to high and low mark paper and scoring, Sonoco offers the famous Velvet Surface (above) that prevents slippage of filament yarns or fine count cotton yarns. Also available is Sonoco's Unitex Surface (left)—perfect for winding silk, rayon, nylon and other filament yarns. Can be supplied solid-surfaced or banded.

There is no guesswork involved when a customer asks Sonoco for a cone and cone surface recommendation. Throughout the years, Sonoco has conducted unending research and experiment. The result of this effort has brought industry-wide benefits, for now it is possible to determine the right cone and surface for specific yarns. It is a service that has enabled Sonoco to become known as a "dependable source of supply".

sonoco
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

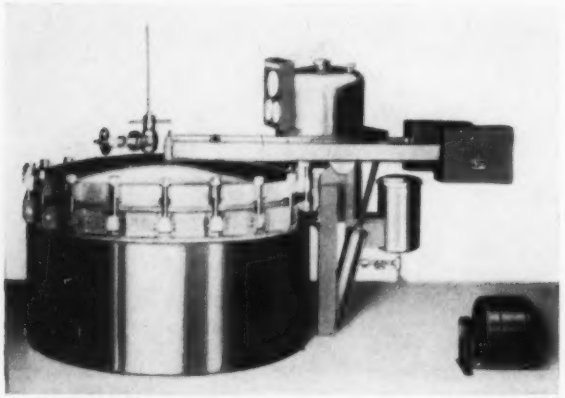
SONOCO PRODUCTS COMPANY

MAIN OFFICE—HARTSVILLE, S. C.

MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT.
PHILADELPHIA, PA. GARWOOD, N. J. LOWELL, MASS. GRANBY, QUE.

DEPENDABLE SOURCE OF SUPPLY

High-Temperature Dye Kettle Dyes Stock or Top



SYNTHETIC FIBERS dye more easily, dyeing cycles are reduced, penetration and levelness are enhanced, and dye exhaustion is virtually complete with this new pressurized stock-dye kettle that is built in all standard capacities.

A new Hy-Temperature stock-dye kettle for dyeing synthetic fibers at temperatures up to 250° F. has been added to its line of dyeing and finishing equipment by Riggs & Lombard, Inc., Foot of Suffolk St., Lowell, Mass. Made in standard capacities from 50 to 1,000 lb., the unit can also be made into a combination type for handling both raw stock and top, either on jack spools or in standard ball-top form.

The hinged cover is counterbalanced and is opened and closed by air. A suitable pressure-relief valve is provided.

Improved features of the machine include insulation, an instrument panel with pressure gauges and thermometer, a heat exchanger to give a uniform volume of dye liquor with no build-up from condensate and to provide for rapid cooling at the end of a cycle, a "shading" tank that allows small quantities of dyes to be added without losing temperature or pressure, and a sampling device.

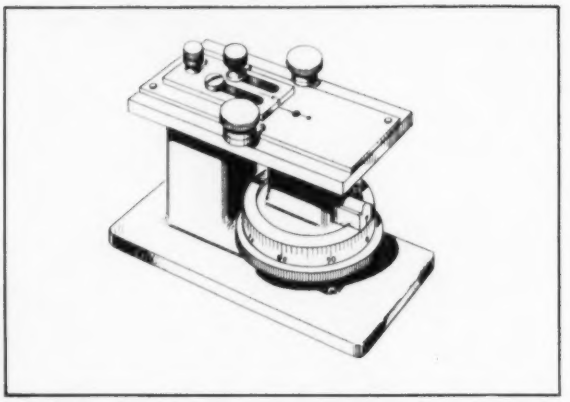
Liquor is circulated through the stock from the top to bottom. The direction of flow is not reversible.

A standard part of the equipment is a 35-gal. boil-up tank—equipped with steam pipe, dart nozzle, and ejector—for feeding into a pressurized expansion chamber of large capacity.

The pressurized expansion chamber provides plenty of room for dye additions or feed-ins and also allows time for nearly 100% of the dye to be exhausted from the dyebath. Other systems often waste dye and heat in cases where expansion chambers are cut off at atmosphere boil.

Circle T-5 on Reader-Service Card

Preparation and Study of 10-Micron Samples Made Easier



PRECISION, UNIFORMITY, AND EASE of sectioning and studying fiber and yarn samples are made possible by this improved microtome.

An improved fiber microtome that makes possible the rapid preparation and study of sections of fibers and yarns as thin as 10 microns has been put on the market by Mico Instrument Co., 80 Trowbridge St., Cambridge, Mass. Readings from the micron scale can now be taken from the front of the instrument without the operator having to move his position.

A bronze frame carries a precision screw and divided drum that serve as the elevating and recording elements. A small plunger against which the material to be sectioned rests is elevated by this screw to the cutting surface.

The sectioning is done, as with any hand microtome, with a small microtome knife, razor, or even a safety razor blade, after application of a thin film of collodion to retain the sections.

The steel cutting plate is readily removed by loosening two screws, yet is positioned rigidly to the base by dowels. This plate is furnished with a sliding clamp that opens to permit rapid insertion of the material to be sectioned, and closes to locate and hold the sample properly.

The drum is divided into 10-micron divisions. This arrangement provides for the preparation of sections as thin as 10 microns. The feed screw is carefully fitted and lapped to insure precision and uniformity in sectioning.

The instrument is available in two models. No. 200 is designed for fibrous or circular material and is engineered with a 0.031-in. aperture. No. 201 is designed for film, paper, or similar flat material and is furnished with an aperture 0.125 in. long by 0.015 in. wide. Each is priced at $82.50 f.o.b. Cambridge.

Circle T-6 on Reader-Service Card

Plastic-Coated Fabric Uniformity Measured Continuously

At Textileather Corp., Toledo, Ohio, five beta-ray gauges continuously measure the uniformity of every yard of plastic-coated fabric as it comes out of the calenders. The radioactive Strontium-90 in the quality-control unit—called the Accuray and manufactured by Industrial Nucleonics Corp., 1205 Chesapeake St., Columbus 12, Ohio—has a life span of 30 years and is not harmful to the material being measured or to plant personnel.

The device consists of a U-shaped arm. Its lower section contains a capsule of Strontium-90, and the upper arm has a detector device. The fabric being weighed passes between the arms and is thus measured inch by inch.

During production runs, the beta rays bombard the fabric, and the detector measures the number of radioactive particles that pass through. This information is translated instantaneously into pounds per square yard and is recorded on a chart housed in a control console.

The new technique improves on the ordinary method of checking coating applications that consists of cutting sections from each production run and putting the fabrics through laboratory weight tests.

Circle T-7 on Reader-Service Card

STRAIN RESISTANT... At every important point the butt — the beard — the shank — Textile Spring-Beard Needles have unusual strain resistance. They start with a special steel formula, are precision tempered, undergo rigid scientific tests — automatic and electronic — to finish as mirror-smooth needles with the toughness demanded in today's high speed knitting operations.

Strain resistance is but one feature of superior Textile Spring-Beard Needles. Try these long-lasting needles for better performance, lower production costs and beautiful fabrics.

TEXTILE MACHINE WORKS, READING, PENNA.

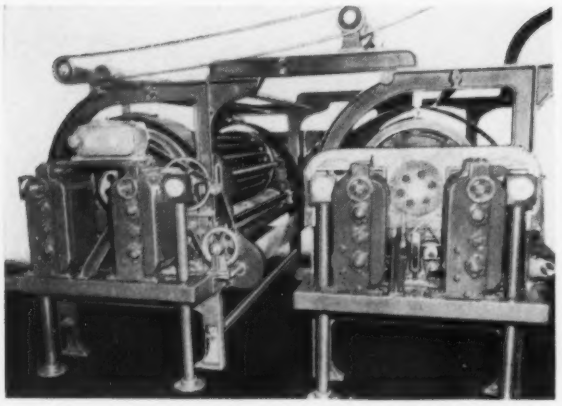
Textile
SPRING-BEARD NEEDLES

For Full-Fashioned Knitting
For Tricot Knitting

ARROW Latch Needles

 For more information, write direct or use Reader Service post card.

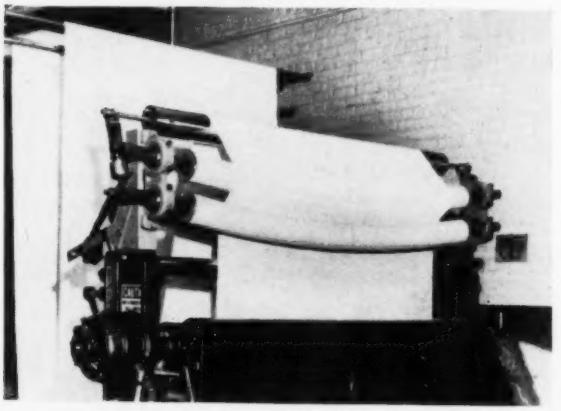
Tandem Napper Doubles Napping Production



DOUBLE-ACTING TANDEM ARRANGEMENT of this napping unit put on the market by David Gessner Co., 41 Fremont St., Worcester, Mass., increases production, improves quality by means of positive drives on the napping rolls that permit fine adjustment of cloth tension, and provides for easy reversal of direction for repeat runs.

Circle T-8 on Reader-Service Card

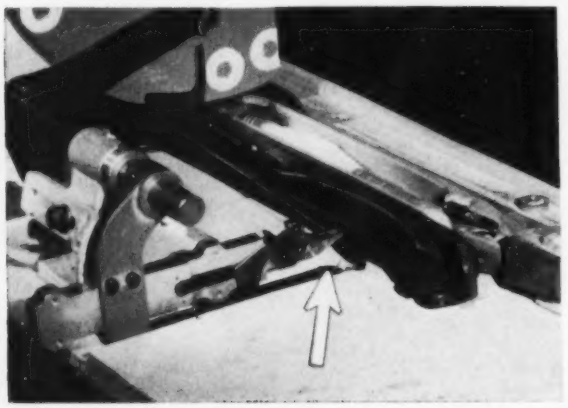
Cloth Evenness Assured Just Before Shearing



SLACK-SELVAGE ELIMINATORS under arrangement with Mount Hope Machinery Co. are now provided on its AV-4 and other knife shears by Hermas Machine Co., Warburton Ave., Hawthorne, N. J. During shearing, the slack-selvage eliminators spread the cloth evenly as it is presented to the shearing knives.

Circle T-9 on Reader-Service Card

New Thread Cutter Is Lightweight and Versatile



SIMPLE AND POSITIVE in action, this thread cutter will hold and cut any yarn. It fits on any battery loom.

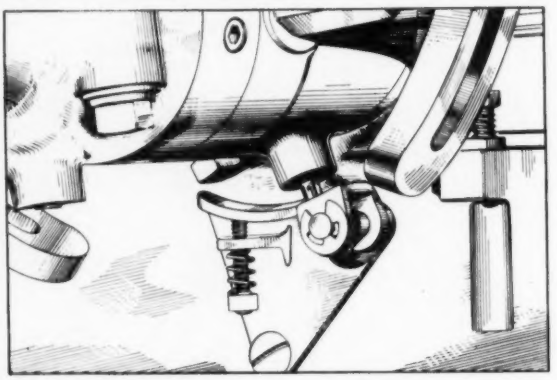
A new Verybest thread cutter, designed for use on any battery loom, is now available from Bullard Clark Co., Danielson, Conn., through its two operating divisions, E. H. Jacobs Southern Div., Charlotte, N. C., and E. H. Jacobs Northern Div., Danielson.

The thread cutter, first shown in prototype at the 1952 Greenville Show, offers the following advantages:

1. One-third the weight of conventional cutters
2. Fewer parts to get out of adjustment
3. Holds and cuts everything from 15-den. nylon to 6s cotton yarn
4. Positive opening and closing that eliminate drag ins
5. Dropping of cut pick assured because of short wide-opening blades
6. One set of parts for all looms, shuttles, bobbins, and yarns

Circle T-10 on Reader-Service Card

Roto-Coner Snubbing Attachment Keeps Packages Steady



FRICTION applied between the stud holder and the spindle-holder bearing assembly on a Roto-Coner winder keeps high-density packages from bouncing during winding.

A snubbing attachment for its Roto-Coner winders that acts as a damper on the cone holder when it is in the winding position, yet allows the holder to drop gently onto the traverse when a package is being started, has been made available to mills by Universal Winding Co., Box 1605, Providence, R. I.

The new attachment is particularly helpful in the winding of yarns that pack firmly on the container and produce high-density packages. Such cones or tubes are more inclined to bounce during winding than softer-wound packages.

The snubber overcomes the tendency to bounce by means of friction that it applies between the stud holder and the spindle-holder bearing assembly. The friction imparted steadies the package on the rotary traverse during winding.

Circle T-11 on Reader-Service Card

JACOBS

"VERYBEST"
RUBBERWELD
LUG STRAPS

- **UNIFORMITY**
  PROVIDES UNVARYING PICK ACTION
- **HIGH QUALITY ARMY DUCK**
  CONSTRUCTION GIVES EXTRA STRENGTH
- **EXTRA-DURABLE**
  PLUG OR HEEL REDUCES ADJUSTMENTS
- **MOLDED AS ONE PIECE**
  ENTIRELY, INCLUDING PLUG
- **NO RIVETS**
  OR PARTS TO WORK LOOSE
- **NO PERMANENT STRETCH**
  —RESISTS OILS—NOT AFFECTED BY HUMIDITY

Made entirely of
rubberized cotton fabric
More uniform
than any other lug strap!

Samples available

THE BULLARD CLARK CO.

JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

Automatic Dye-Jig Drive Applicable to Existing Equipment

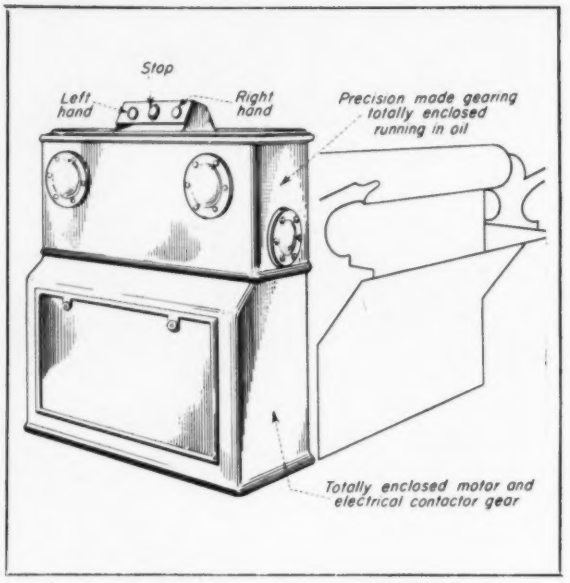
A special patented driving unit for converting any make of dye jig into an automatic machine that will reverse at the end of each run, will automatically stop on completion of a predetermined number of runs, will run at a constant cloth speed, and will eliminate fabric tension, has been developed by F. Smith & Co. (Whitworth) Ltd., Rochdale, Lancashire, England. The unit is called the B-24 model. No American representative has as yet been named to handle the unit.

Couplings are included for connecting the drive to existing jigs. All the old gearing, clutches, and side shafts are removed so that all that is left is the jig body with the top driving rolls in position. The driving unit is then placed against the jig and is fitted in a matter of a few hours.

Other advantages of the driving unit are that it is totally enclosed, self-contained, quiet running, low in running cost, and without belts or shafting.

The units are designed for an a.c. supply but can be used as well with d.c. and a converter.

Circle T-12 on Reader-Service Card


Stop
Left hand
Right hand
Precision made gearing totally enclosed running in oil
Totally enclosed motor and electrical contactor gear

CONSTANT CLOTH SPEED and tensionless runs are the two main advantages obtained from this British automatic dye-jig drive.

New Feed Mechanism Improves Stitching Versatility

SHELL STITCHING and crochet stitching are made interchangeably with a new feed mechanism developed for this machine. The change is made by moving only one lever.

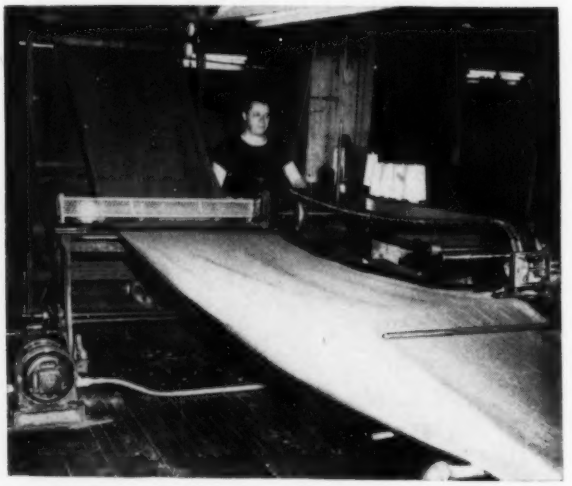
A new feed mechanism for its shell-stitch machines that makes possible a plain crochet stitch or a three-stitch shell has been developed by Merrow Machine Co., 2803 Laurel St., Hartford 6, Conn.

The new arrangement is designed to meet the demand of knitwear and sportswear manufacturers for machines capable of economically producing decorative edge finishes.

A change from shell stitching to crocheting (or the reverse) requires only the movement of a lever. This change may even be made while the machine is in operation. In addition, five different combinations of shell and crochet stitching are possible with only minor changes.

Circle T-13 on Reader-Service Card

Automatic Tacker Operates at 65 Yd. per Min.



AUTOMATIC ALIGNMENT of selvages is assured with this Uxbridge tacker. The machine tacks at a rate of 65 yd. per min. It increases production and saves laborious hand tacking.

Tacking fabrics at rates up to 300% faster than with conventional hand tacking is now possible with the new Uxbridge automatic tacker that has been made available to mills generally by Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

Speeds up to 65 yd. per min. are possible, as contrasted with the 17 yd. per min. that is about the best hand tacking can do. Any style or weight of fabric up to 94 in. wide can be handled on the automatic tacker. Also, cloths of varying widths and weights can be sewed together.

Tacking automatically in aligned selvages is assured by electrically actuated mechanisms.

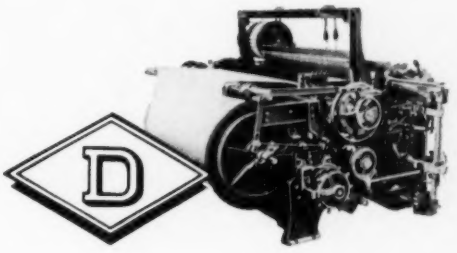
Circle T-14 on Reader-Service Card

NOW... Finer Quality Cottons FROM DRAPER X-2

with CENTER FORK FILLING MOTION and RATCHET TAKE-UP

The Draper X-2 Model with the new Center Fork Filling Motion and new Ratchet Take-up will give you matched pick goods of the same quality produced for years in synthetics on Draper XD looms.

High Speed Movies, taken at 3000 frames per second, show the action of the center fork on a filling break. The loom stops on the broken pick.



"Retaining Leadership through Research"

DRAPER *Corporation*

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S. C.

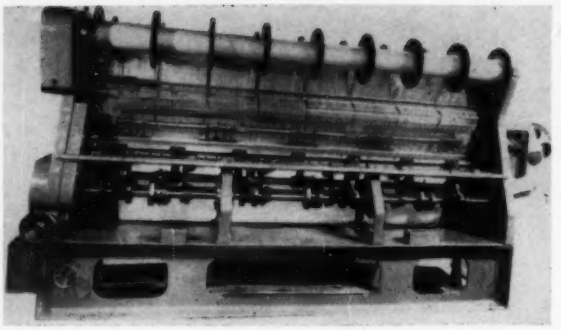
THE WORLD'S LARGEST MANUFACTURER OF AUTOMATIC LOOMS

Improved Mayer-Simplex Tricot And Sueding Units Developed

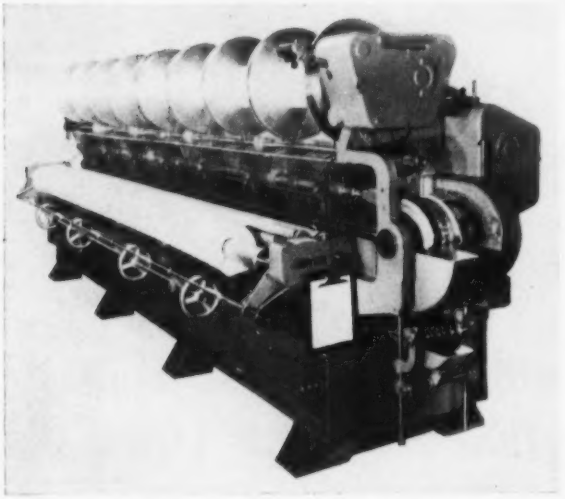
Higher speeds, wider widths, and softer hand are the outstanding features of three improved tricot-knitting and finishing machines recently developed by Alfred Hofmann & Co., 629-635 59th St., West New York, N. J.

The captions under each picture highlight the details.

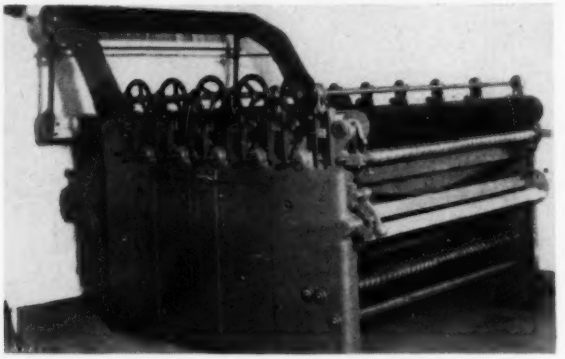
Circle T-15 on Reader-Service Card



122-IN. KNITTING-WIDTH Simplex tricot machine is double the previous width and also knits from 300 to 400 courses per min., as against previous Simplex machine speeeds of 240 to 280.



MAYER TRICOT MACHINE of this latest design is said to exceed "by far" the production of the company's older units. Automatic warp-drive mechanisms are available with the unit or for other types of tricot machines at approximately $750 installed.



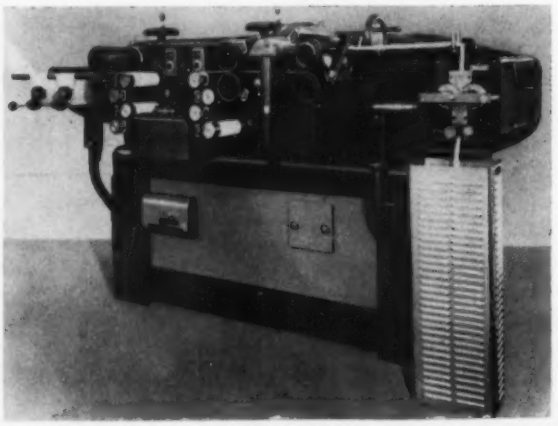
WAGNER SUEDING MACHINE suede-finishes both with and against the grain at a linear speed of 30 to 33 ft. per min. Atlas, Simplex, and interlock fabrics, as well as woven and tricot fabrics with a laid-in thread, can be processed on it.

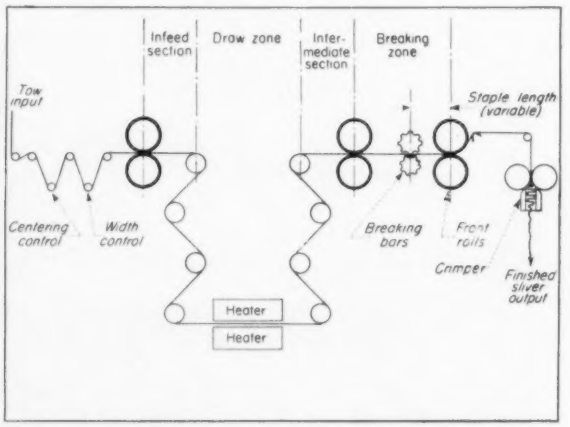
Tow Stapler Produces Uniform Sliver, Even Yarns

A Perlok-system tow stapler that maintains excellent fiber parallelism while reducing continuous fibers to crimped sliver of controlled staple length has been announced for regular mill use. It is manufactured by Turbo Machine Co., West Main St., Lansdale, Pa.

The machine offers great flexibility in choice of fiber, staple length, and yarn characteristics. It operates from a 7½-hp. motor.

The sliver produced can be processed into even, uniform yarns with only one open-drawing operation with 10 dou-





MAKING STAPLE of continuous filament and giving it the crimp you want are what this machine is designed for. From tow to yarn in five steps is now possible: (1), the Turbo stapler; (2), open doubling; (3), pin drafting or gill reducing; (4), roving; and (5), spinning.

NEW HORIZONS

WITH GAIR EXPANDING SHIPPING CONTAINER NEIGHBORHOOD SERVICE

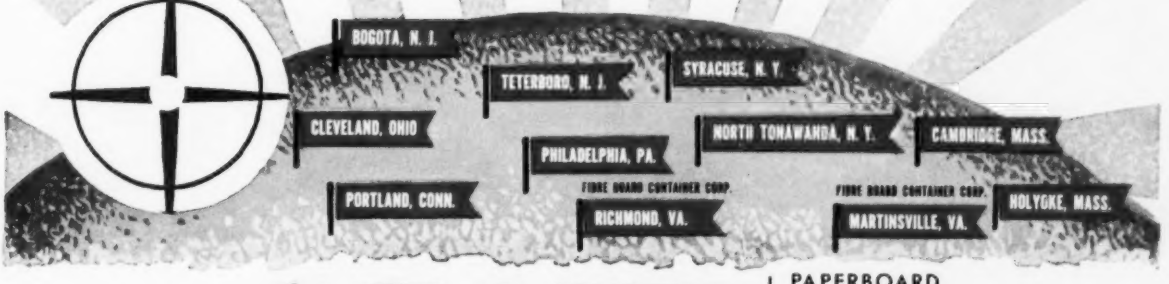
Gair expanding Container Service embodies every facility of having an efficient shipping container plant, right in your own neighborhood.

This expansion of strategically located plants is making it commercially possible for many new customers to profit by Gair unexcelled experience and facilities.

More than ever Gair top-flight packaging experts are creating new and better containers... protective containers that defy the tremendous hazard of shipping.

Always remember that the Gair organization extends a helping hand in solving shipping container problems.

Write for your Free copy of Container Handbook



ESTABLISHED 1864

GAIR

PAPERBOARD
FOLDING CARTONS
SHIPPING CONTAINERS

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK • TORONTO

For more information, write direct or use Reader Service post card.

blings, one pin-drafting or gill-reducing operation with three doublings, a roving operation, and double-creel spinning.

How Staple Is Made

The tow is pre-tensioned before entering the back rolls by means of snubbing bars. An adjustment knob controls the centering of the tow while another knob controls the width of the tow as it enters.

The tow is then heated if necessary. Two thermostatically controlled heaters can be made to contact the tow as it passes through the stretching zone. The thermostats regulate the top and bottom heaters and can be set to give from 50 to 500° temperature as needed for the particular fiber.

After the continuous filaments have been pre-tensioned to remove the crimp and to insure an even feed to the breaking zone, a draft between 2 and 8 is applied in the breaking zone.

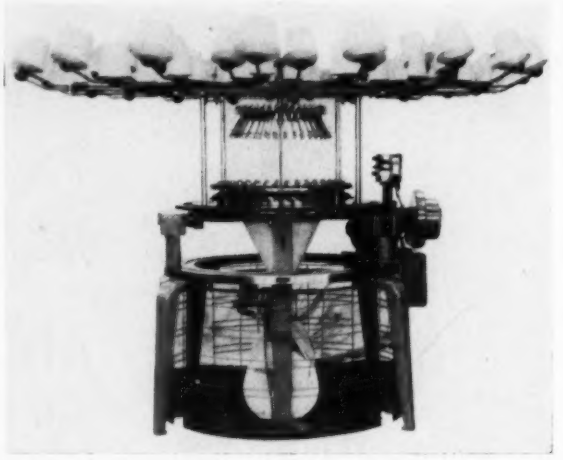
At the same time, the fibers are thrown out of their normal path by abrasive edges and are broken into staple lengths. Adjacent fibers therefore do not necessarily break at the same point or to the same exact length.

A vacuum system operates over the breaker bars to remove the fly made during the breaking process. The accumulated fly cannot blow about, but collects in a trap that is readily emptied.

After leaving the front rolls, the fibers enter the crimper, where varying kinds of crimp can be set in again—light crimp for a silky hand and high luster, or a high crimp for a worsted hand and dull effect.

Circle T-16 on Reader-Service Card

Machine Knits Overcoat Material, Linings



PRODUCTION ADVANTAGE of this Model-*Fleece*, Style RSF, 26-in.-dia., 36-feed, overcoat- and fleece-material knitting machine is that it handles yarn packages as large as 6 lb. Manufacturer is H. Brinton Co., Kensington Ave. and M St., Philadelphia 24, Pa.

The new machine is made in cuts varying from 8 to 18 and has design wheels and manual tuck bars on all feeds.

Standard equipment includes individual motor drive, push-button jog control, noiseless magnetic clutch with self-contained electric panel, a 72-end bobbin table with a 36-end double stop motion, and a take-up reel with automatic roll control.

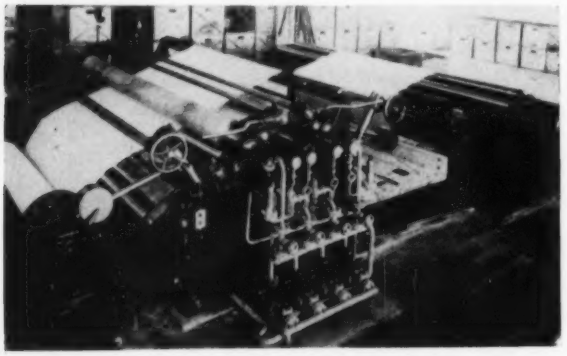
Circle T-17 on Reader-Service Card

Dry Slasher Offers Ease of Operation, Economies

A dry slasher that does not use water as part of the sizing material, but instead passes the warp through a fusible sizing material that dries immediately in open air, is now available in the United States after successful runs in Austria and Switzerland. The manufacturer of the machine is Texma K. G. of Micheldorf in Upper Austria, and the American representative is G. H. N. DeBecker, Inc., 165 Broadway, New York 6, N. Y.

The new slasher has no dry cans or drying chambers. It requires a floor space of 15x10x4 ft. When operated electrically, the unit needs no more than 4 hp. to run.

The warp runs from the creel first over a preheater and heated squeeze rolls; and then it runs over a guide roll to the sizing area, where it passes between two heated cotton-fabric-covered squeeze rolls, the lower of which revolves partly in the liquefied sizing material.



A WAXY NON-AQUEOUS SUBSTANCE is used as the sizing material in this simplified slasher. No dry cans or drying chamber are necessary. All fibers can be handled at speeds up to 30 yd. per min. Desizing consists of a simple self-soaping in a bath containing a soda solution.

The waxy, non-aqueous substance used as the sizing material is applied as follows: As a powder it is added to the size box and liquefied at a temperature of 95° C. (203° F.). It is at this temperature that the warp picks it up. The nature of the sizing material is such that it becomes solid again at 60° C. (140° F.). Thus the warp is ready for beaming almost as soon as it hits room temperature again, and so it does not have to run through a drying operation.

Speed of the warp going through can be as high as 30 yd. per min.

Desizing Is Easy

The new method of sizing is designed to give additional advantages in desizing in preparation for finishing. To remove the wax-like size does not require soap or other washing compound. The sizing is self-soaping and washes itself out when a soda solution is added to the desizing bath.

The sizing material leaves no yellowish color on the fabric, is free of oxidizable components, does not get rancid, and leaves no residue.

The sizing unit is designed to handle all types of fibers. Four months are required for delivery of the first few units into the united States.

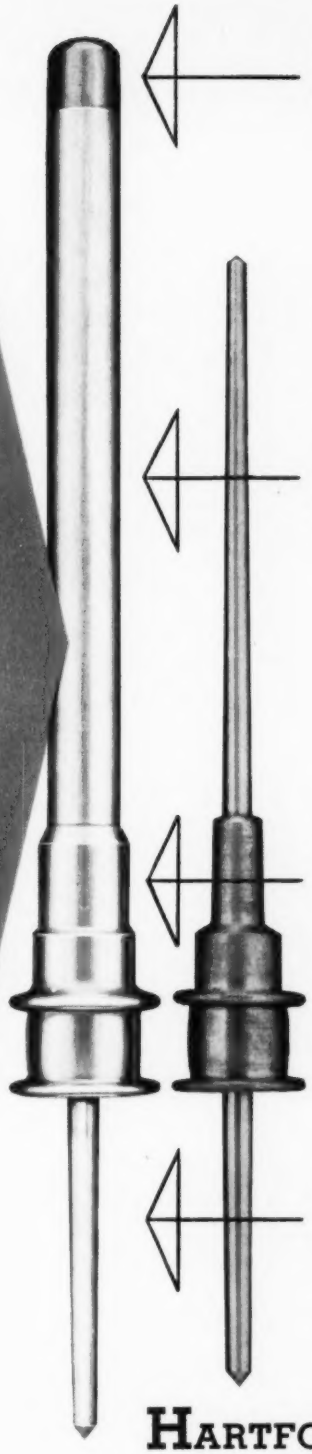
Circle T-18 Reader-Service Card

TEXTILE EQUIPMENT NEWS

(*Continued on page 224*)

DOUBLE DIVIDENDS
from converting with
HARTFORD
Spindle Adaptor

1. ***Precision installation on present blades***
2. ***Design permits later addition of anti-friction running gear***



Steel cap provides extra protection at this point.

Hartford solid aluminum adaptor — in sizes to fit all types of paper or plastic tubes.

Extra protection at this metal-to-metal wear point. *New steel* whorl is hard *chrome plated.*

Present blade saved — regardless of make — when in reasonable condition.

Your investment in converting spindles to service with paper or plastic tubes will pay off with unique advantages when you send the job to Hartford. This firm, which has specialized for 77 years in manufacturing precision products, is a leading supplier of close-tolerance machine parts — including components that for many years have been used in textile machinery. Ask our nearest technical representative to discuss the details of Hartford adaptor economies. Simply write today.

HARTFORD MACHINE SCREW CO., INC.

HARTFORD, CONN. SOUTHERN DIV. 110 W. McBEE AVENUE, GREENVILLE

NEW Dyes AND Chemicals

New Emulsifier-Detergents For Wool, Rayon Scouring

Two new surface-active agents are recent additions to the line of Rohm & Haas Co., Philadelphia, Pa. These new products, designated Triton X-102 and Triton X-138, are highly concentrated nonionic surfactants based on a synthetic hydrophobe and ethylene oxide.

Triton X-102 is a detergent with excellent emulsification properties for waxes and oils, the company claims. Triton X-138 is said to solve the problem of efficiently scouring raw wool without damaging the finest fibers. The product readily emulsifies the wool grease and is said to be effective under low-alkaline conditions. It rinses out readily, even at low temperatures, and is not adversely affected by hard water. It is not substantive to wool, and therefore does not leave residues on the wool fiber. This property is said to result in high efficiency in the wool carding operation.

Circle D-1 on Reader-Service Card

New Fungicide Now Commercially Available

A new industrial fungicide for textiles and other materials is now available from Hercules Powder Co., Wilmington, Del. The new preservative, Rosin Amine D Pentachlorophenate, has been subjected to a 4-yr. test program. The research program has been a cooperative project of Hercules and Monsanto Chemical Co. The fungicide is a reaction product of pentachlorophenol and Rosin Amine D, a primary amine manufactured by Hercules.

Circle D-2 on Reader-Service Card

New Substantive Softener Resists Dry Cleaning

A new finish, Ampitol 35D, made by Dexter Chemical Corp., New York, N. Y., is said to produce a soft, silky hand on acetate, viscose, nylon, and other synthetic fibers to improve the cutting and laying up properties, and to help control static electricity. This substantive softener, cationic in nature, is claimed to resist dry cleaning and washing when applied either in the dyebeck as a final rinse or by pad.

Circle D-3 on Reader-Service Card

Dyeing Dacron Under Pressure

Sandoz Chemical Works, Inc., has recently completed a study on the application of acetate colors on Dacron under pressure at a temperature of 250° F.

The commonly held beliefs that (1) dyeings made on Dacron with acetate colors, under pressure, yield much fuller shades with improved fastness properties, and that (2) when high temperature dyeing is used, it is possible to eliminate the swelling agent necessary at boiling temperatures for all but very light shades, were investigated. Strengths and fastness properties of some selected colors, when dyed on Dacron spun yarn with no assistants at 212° F. for 1 hr., with 10% Velanol TC at 212° F. for 1 hr., and under pressure with no assistants at 250° F. for 1 hr., were tabulated.

Strength Is Biggest Factor

It was noted on examination of the fastness properties that little change takes place in wetfastness when the temperature is raised to 250° F. as against dyeings made with Velanol TC at the boil. The fastness to light of the dyeings made at 250° F. is only slightly better than of those made with Velanol TC. When it is considered, however, that the strength of the pressure dyeings in the majority of cases is somewhat greater, the difference in lightfastness becomes less significant.

The most important advantage of dyeing under pressure was seen in the column headed "Strength." In the case of Artisil Direct Blue GFL, the color most difficult to exhaust at boiling temperatures, the increase in yield at 250° F. over the Velanol method reaches almost 100%.

Sublimation Control

When dry-finishing temperatures of 320° F. and higher are used, sublimation ratings decrease considerably. Therefore, Sandoz recommends that all Dacron material should be processed at temperatures not exceeding 260° F. since most dyestuffs applicable to this fiber begin to sublime at temperatures above this point. The recommendation applies to drying, steaming, hot pressing (in plant or tailor shop), decatizing, and all other processes that involve high temperature.

Lubrication Properties of Highly Sulfated Esters Investigated by Dexter

The unusual lubrication characteristics of a sulfated ester of oleic acid in wet processing proved puzzling to the Dexter Chemical Corp. laboratory for some time. Sidney M. Edelstein, technical director, after detailed investigation, showed that this unexpected property of Atolene RW was the result of almost complete sulfation.

The high degree of sulfation in the Dexter product apparently is responsible for an absorption of the sulfated ester by the fiber surface during dyeing and scouring. This layer of fatty molecules acts as a lubricating film. Apparently, with an ester of low SO_3 content the fiber does not absorb the ester on its surface, and hence there is no surface lubrication.

The high degree of sulfation, which also increases to a considerable degree the wetting properties of Atolene RW, is obtained in modern high sulfonation equipment installed a year ago.

Here's How To Use It

In an 8,000-gal. Hinnecken boil-off machine an initial charge of 20 lb. of scouring agent, 10 lb. of sodium phosphate, and 20 lb. of Atolene RW is prepared. During the course of an 8-hr. run, a 50-gal. stock solution is fed into the machine. The stock solution is made up by mixing 20 lb. of phosphate and 20 lb. of Atolene RW together and bringing the volume up to 50 gal.

In a 12-ft. dyebeck, 3 gal. of stock solution as given above is used to scour the rayon. In a 16-ft. beck, 5 gal. of the stock solution is used.

In the dyebath, after the goods have been scoured, 3 gal. of stock solution is directly added when a 12-ft. beck is used; 5 gal. in a 16-ft. beck. Dyeing is continued in the regular manner.

For especially heavy goods an additional ½% of Atolene RW on the weight of the goods may be added to the dyebath.

specify

NORANE* R

THE DURABLE, DEPENDABLE, ECONOMICAL WATER REPELLENT USED ON OVER 100 MILLION YARDS OF GOVERNMENT FABRICS

APPROVED ON GOVERNMENT FABRICS

***IMPORTANT**

Norane* R is a water repellent material manufactured under patents 2,261,097; 2,285,948; 2,333,623; 2,386,631

Warwick Chemical Company, Division of Sun Chemical Corporation, has the exclusive rights under these patents. Therefore the materials described therein can be manufactured only by the Warwick Chemical Company and obtained *only* from Warwick Chemical Company.

VETERAN of many years' service in the textile industry, Norane* R is particularly noteworthy as *the* durable water repellent which meets joint Army-Navy specifications for all military fabrics requiring durable water repellency.

Principal advantages:

1. May be applied to cotton, rayon, or blends.

2. Readily and completely dispersed in water above 60° C. (140° F.) to form a translucent solution. Stable for many hours at temperatures below 50° C. (122° F.)

3. May be applied to sewing thread without impairment of sewability or decrease of light fastness of dyestuffs.

Write for technical data describing simple, economical application procedures.

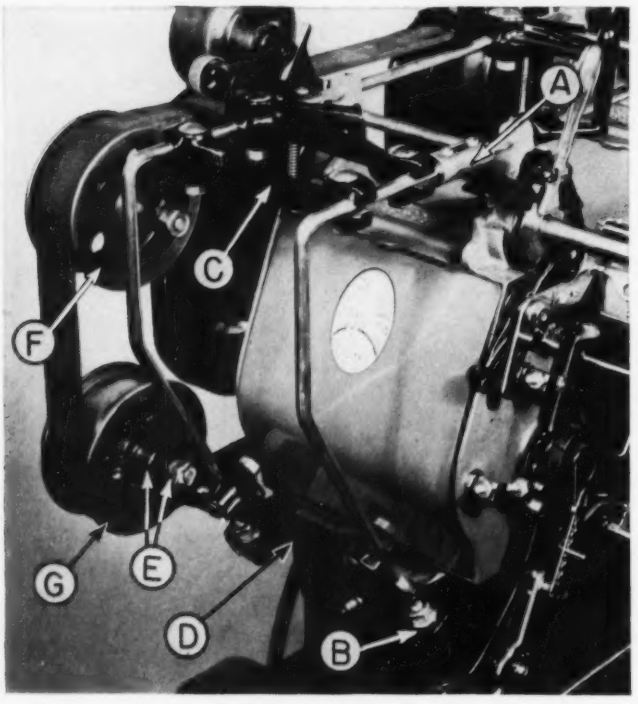
WARWICK CHEMICAL COMPANY, DIVISION Sun CHEMICAL CORPORATION 10th STREET AND 44th AVENUE, LONG ISLAND CITY, NEW YORK

MAKERS OF RE-TREATABLE IMPREGNOLE* AND DURABLE NORANE* WORLD'S No. 1 WATER REPELLENTS and Antilustrole* dullers • Appramine* cationic softeners • Appretole* anionic softeners • Eumercin* mercerizing assistants • Formaset* textile resins • Hydrolux dyeing and printing assistants • Lanole* tar and grease removers • Norane* 4-Star hydrophobic resins • Organosol coatings for textiles and paper • Plastisol for coating and molding • Prym* durable stabilizing, crush proofing, embossing and glazing resins • Setole* textile resins • Sulfanole* synthetic detergents • Suntone* pigment printing colors for textiles and plastics • Warcofix* color fixatives • Warco* GFI gas fading inhibitor • Warcolene finishing oils • Warconyl* fire retardants • Warcosan* wetting and rewetting agents • Warcosol* penetrants • Weave-lok* non-slip finish.*®

THIS IS NO. 97 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



HOW TO ALIGN BELT AND END IDLER PULLEY ON NO. 50 MACHINES

When No. 50 Precision Winders are installed properly, you may run the same endless belt for a period of years with a minimum of maintenance.

The following procedure, followed by Universal service men when installing No. 50 machines, will help you get the proper pulley alignment when making your own installation.

The two main tie rods connecting the frames are used to line and level the machine; but the end sections, to which the End Idler Pulleys are fastened, are lined up separately. The method of doing this is as follows:

1. Attach the end sections of the tie rods to the main sections by means of the Coupling (A).

2. After tightening the two Couplings, push the lower end of the rods *as far as possible* into the slots (B) in the bed; with the fingers, adjust the nuts to the approximate position. A level across the end tie rods will help get a better setting before tightening the nuts at (B).

3. Mount the Top End Idler Pulley Bracket (C). Tighten the end near the pulley first; the V-groove at that end is a finished surface and should properly locate the other end of the Bracket. Then tighten the far end.

4. Mount the Lower End Idler Pulley Bracket (D). This, too, has a finished V-groove at the end near the pulley, which should be tightened first. This Bracket is also equipped with washers (E); by shifting these washers, pulley (G) can be brought into line with the Top End Idler Pulley (F). Align the motor pulley with spindle driving pulleys.

5. Now install the belt and start the motor to see if the belt runs around the end pulleys without touching the flanges. You may need to make one or more of the following adjustments to make the belt run true:

a. If the belt rubs against either flange of the Upper Pulley (F), move the outer end of the Pulley Bracket (opposite end from pulley) slightly along the tie rod. The direction depends upon which way the belt is to be thrown. This can be done by slightly loosening both nuts and tapping the outer end of the Bracket to improve the alignment; then tighten this end of the Bracket first.

b. It may not be possible to eliminate the rubbing against the flanges until the lower pulley is also adjusted by moving the outer end up or down on the tie rod.

c. It may be necessary to raise or lower the tie rods by adjusting the nuts at (B).

d. To correct a slight twist in the Lower Pulley Bracket, one of the tie rods may be brought forward in the slot at (B).

e. When the tie rods are brought forward in the slot, it is important to maintain the level of the Upper Bracket.

After adjusting the lower pulley, it may be necessary to make another slight adjustment of the Upper Pulley Bracket (C) until the belt runs true.

When these adjustments are properly made, it should not be necessary to make any more adjustments for many months. If at any time the belt should rub continuously against one flange, the setting described above should be checked again.

23.2.15

March, 1953

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

LETTERS FROM OUR READERS

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

Round Table

AN OLD-TIMER REPLIES TO MR. LORD

Dear Mr. Lord:

I was pleased to see your article in the January issue of TEXTILE WORLD, and it just makes us all realize how valuable you have been to the textile industry and how much you have contributed to it in publishing TEXTILE WORLD.

You deserve a great deal of credit for all you have accomplished and all the paper has been able to do, and those of us who use the paper regularly and read it should be everlastingly grateful for all you have contributed to our success.

I trust you are enjoying good health and that you may be with us for many more years to come.

With my hearty congratulations, I am

CHARLES P. RAYMOND

Charles P. Raymond Service, Inc.
Boston, Mass.

COTTON-FIBER TABLE MAKES A HIT

Dear Editor:

I want to take this opportunity to congratulate you on the fine job you have done in preparing the "Cotton-Fiber Table." This is a fine piece of constructive and helpful literature that I believe should set a standard for work of this kind for a long time. I hope you will make this table an annual feature.

A. K. LANDAU

Saco-Lowell Shops
Boston, Mass.

MORE ABOUT UNIVERSAL YARN-NUMBERING SYSTEMS

Dear Editor:

I have read with interest the letter written by Squire Blackshaw, Montreal, Que., in "Round Table," TW, Oct. 1952.

As a member of ASTM I cannot agree with Mr. Blackshaw that the "rank and file" members have not had an opportunity to discuss the merits of the Grex system of yarn numbering. Of course, I cannot speak for the members of the BTI and the Textile Technical Federation of Canada, since I am not a member of these organizations. We of ASTM have had ample opportunity to consider the Grex system from all angles.

The American Society for Testing Materials is made up largely, I believe, of technical men and women, such as research directors, laboratory supervisors, chemists, and technicians. These people are an important part of industry, but do not usually, except in a very indirect way, control the purse strings of industry.

Perhaps a mill manager might realize the advantages of a universal yarn-numbering system such as Grex, but because of the outlay of money required to buy the metric scales and reels for putting such a system into effect, as well as the training problems involved in acquainting the supervisors and employees in the mill with the new system, he will just postpone taking any action.

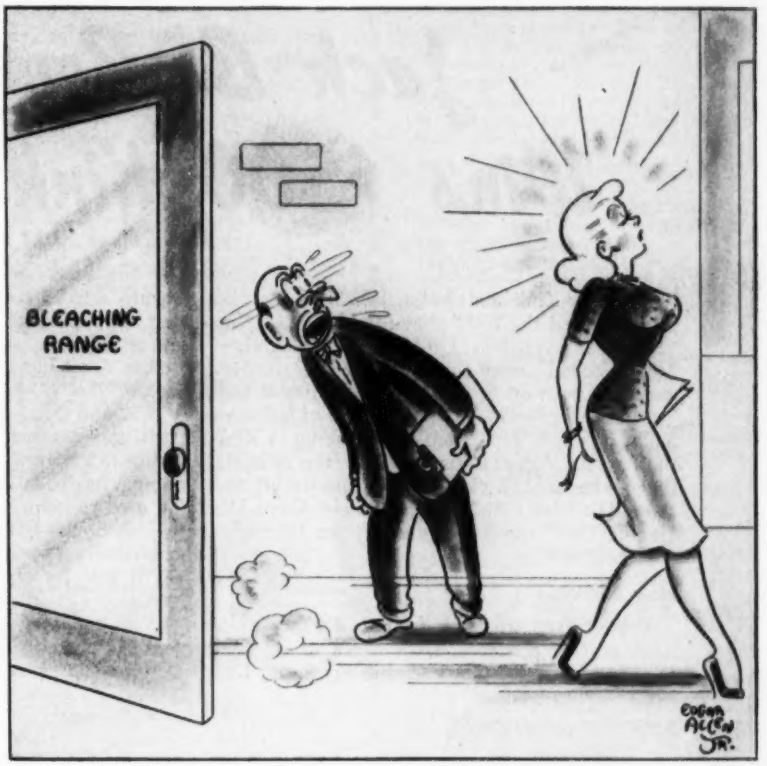
Sometime ago we made a fabric containing cotton, asbestos, and rayon, each calculated in a different system. To figure the weight of the fabric I had to convert the asbestos and the rayon to the cotton system, a system understood by all of our people who would need the information. Here I can see the advantage of a universal system, but, for reasons already mentioned, the boss does not agree that the advantages are worth the expense and trouble involved.

Perhaps when the people who run the mills want a universal yarn-numbering system badly enough, the proponents of the Grex, Tex, Integral, or some other system may get a more sympathetic hearing.

H. L. PRATT

West Columbia, S. C.

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr*



"Miss Foodle, in the future will you kindly bleach your hair on your own time?"

AT THE GREENVILLE OFFICE OF TEXTILE WORLD, Jack B. Boyter receives his check for $500 from Kink Editor Jim Kennedy. Two of Mr. Boyter's Kinks captured monthly $25 prizes in 1952. Mr. Boyter, a veteran of 31 yr. in mill supervision, has served in several Southern states and in Latin America. He is now general overseer of Robinson Mills, Gastonia, N. C.

Jack B. Boyter Wins $500 Kink Prize

A regular Kink contributor, Jack B. Boyter, has been awarded the $500 prize for 1952. His Kink "Rejected Laps Fed Uniformly—And Only 1 Man Needed" won the January, 1952, contest and then went on to win the year's prize as well.

Mr. Boyter, who is general overseer of Robinson Mills, Gastonia, N. C., has been sending in Kinks to TEXTILE WORLD since 1947. He estimates that he has sent in close to 30 Kinks during that time. His Kink "Roll Picker's Shield Keeps Dirt Out of Yarn" was the winner in the December, 1952, contest.

How He Won

When asked what his formula for a winning Kink is, Mr. Boyter said, "I don't think about the contest much when I send in my ideas. I am mainly interested in seeing some of my ideas help out men in other mills. Of course, I do like to see my Kinks in print, and I like to win; but these things don't mean as much as helping the other fellow."

Mr. and Mrs. Boyter have two boys and two girls; the youngest girl, who is in high school, is going to get the benefit of the $500 prize. The money has been deposited in the bank and will be used to help send her to college.

Jack Boyter has a few words of advice to Kink contributors:

"If you are out for the prize money—and it certainly can come in mighty handy—the best way to get it is to send in Kinks regularly. It's just like basketball—the more shots you take, the better chance you have of getting a basket."

Booth

Originators of STRIP-O-MATIC *

CARD CLOTHING NEWS AND VIEWS

A COMPLETE LINE OF *QUALITY CARD CLOTHING* FOR EVERY DEMAND

For 60 years this company has supplied the textile industry with quality Card Clothing. In addition to the new STRIP-O-MATIC, a complete line is furnished for all types of rolls: Cylinder Clothing . . . Doffers . . . Workers . . . Strippers . . . Tumblers . . . Fancies . . . Rings . . . Lickerins . . . Feed Rolls, etc.

WOOLEN: Flexifort, wool face and felt face foundations in all plies. Wool face and felt face foundations are stitched in heavier gauges to reinforce and prevent lifting of the face when stripping. Set with round, hardened and tempered steel wire in gauges from #26 to #36. Also, double convex in gauges from #26/30 to #34/38.

WORSTED: Rubber face foundation set with round, hardened and tempered steel wire in gauges from #20 to #38. Also, double convex in gauges from #20/24 to #34/38.

CARPET and ASBESTOS: Wool face, felt face and flexifort with extra plies. Set with round or double convex H. and T. Steel wire in gauges from #18/22 to #28/32.

COTTON: Cylinders and doffers in C.C.W.C. and C.W.C. foundation from #80's to #130's. Burnishing and Stripping Fillets.

LICKERIN CLOTHING: Foundations — Double Leather, Balata, Fabreeka, and Enamel Face. Diamond point or angular wire for lickerins and feed rolls is standard in #16, 18, 20, 22, 24, and 26 (angular) D.P. Also Single Convex in #12/20, 12/22, 12/24 and 15/24.

NAPPER WIRE: Foundations — Rubber face and felt face. Round, angular, and double-convex H. & T. steel wire.

PLATED WIRE and REHARDENED POINTS are available on all the above if desired.

You can count on this superior Card Clothing to do a better job for a longer time.

OUR 60TH YEAR OF SERVICE

CIGARETTES AND THE TEXTILE INDUSTRY

Besides the fact that many textile men smoke, you may wonder just what place cigarettes have in an ad for the textile industry.

An Interesting Carding Story

The shredded tobacco must be uniformly spread before it is made into cigarettes in order to insure the familiar smoking requirements, round, firm and fully packed. The individual shreds are aligned by using a special type of Booth Card Clothing to assure even distribution of tobacco in the cigarette.

An Exacting Requirement

The high standards of the cigarette industry are so demanding that the card clothing must be accurate to the thousandth part of an inch. Booth clothing more than answers these requirements. Critical weight controls on each individual cigarette check the accuracy of feeding. It is essential that efficient accurate spreading take place if this weight requirement and the packing requirement of the tobacco are to be met.

Many Famous Cigarettes Depend on Booth

Lucky Strike, Pall Mall, Fatima, Chesterfield, and Philip Morris are among the many famous brands of cigarettes that depend on Booth Card Clothing for uniformity and quality in cigarette manufacture. These well known companies in addition to the American Machine & Foundry Company and Bonsack Machine Company, principal equipment suppliers to the tobacco industry, depend on Booth as their major supplier of card clothing.

Benjamin Booth Company card clothing meets the specifications of this exacting industry just as they do those of the textile industry. We feel confident that you too will benefit by using Booth Card Clothing for every carding requirement.

Sincerely yours,

E. Allen Draper Jr

PRESIDENT

Booth

BENJAMIN BOOTH CO., ALLEGHENY AVE. & JANNEY ST., PHILA. 34, PA.

 For more information, write direct or use Reader Service post card.

Kinks AND SHORT-CUTS

How We Measure Tapes for Twisters

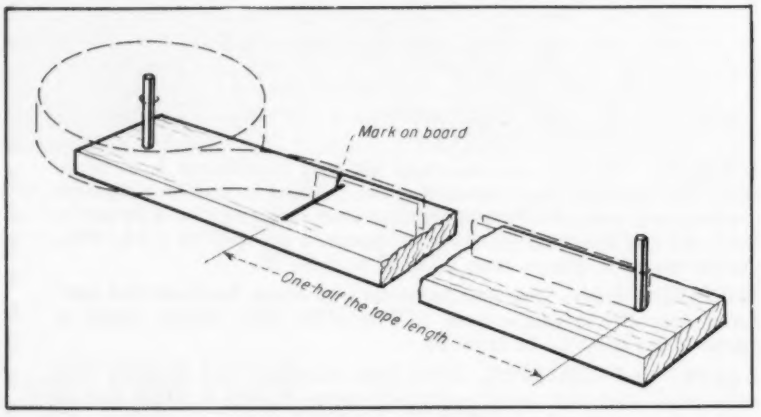
We used to measure twister tapes from the old tapes. This wasn't a very neat way to do it, and length was not always uniform. So we made this measuring device.

First we took a board 8 ft. long, 3¾ in. wide, and ¾ in. thick. We put a 5-in. metal rod at one end to hold a roll of tape and another rod at the other end to loop the tape around.

Then we determined our correct tape lengths and marked them off on the board. (With the looped arrangement we only had to lay off half the length required.)

All we do now is loop the tape around the peg, pull it tight, and cut it off at the proper mark.

This same arrangement can be used for spinning tapes and will save a lot of time. *E. Gibson, Liberty, N. C.*



PEGGED BOARD makes the measuring of tapes an easy job. The different lengths required are gauged on the board.

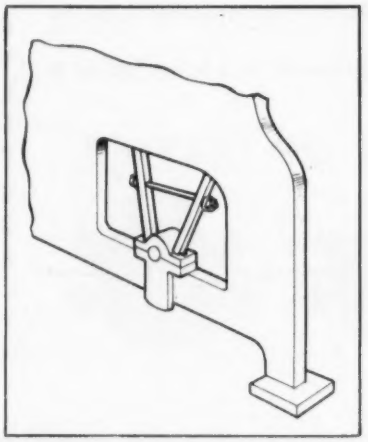
We Use Old Picker Sticks To Brace Broken Bearings

We often have a camshaft or crankshaft bearing break. Since it's always difficult to replace a broken bearing when a warp is in the loom, we looked for a way to repair the broken bearings.

We now brace broken bearings and continue to use them until the warp runs out; then we replace the bearings.

Two old picker sticks are cut to reach at a 30° angle from the top of the camshaft bearing to the bottom of the loomside directly over the camshaft. A bolt of ½-in. diameter holds the picker sticks in position, and pressure is put on the bearing by tightening the nut on the bolt to the pieces of picker sticks.

The braces hold a broken bearing firmly in place until the warp runs out. Then it's easy to put in a new bearing.



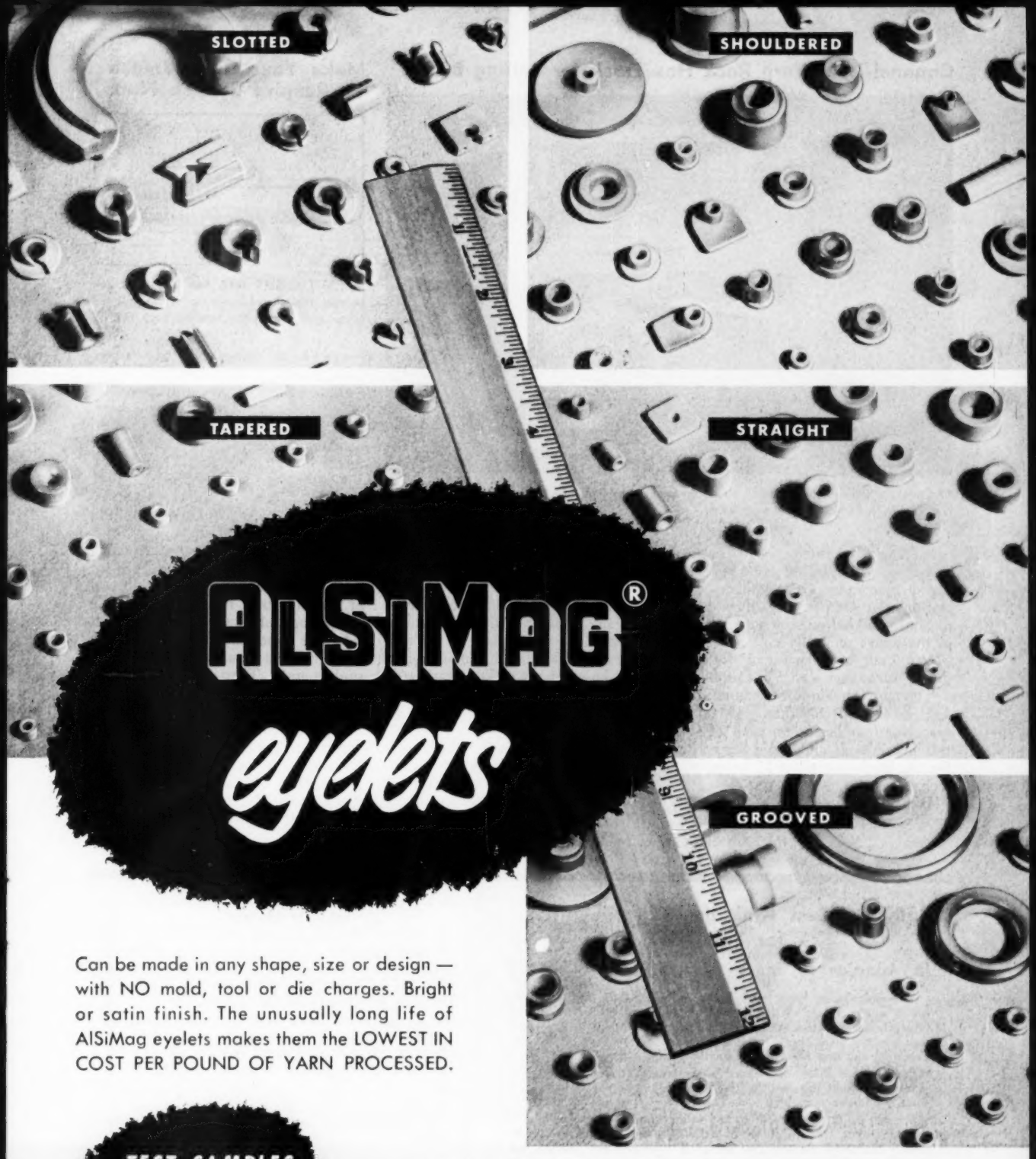
TIGHTEN THE NUT on the bolt and the broken bearing will stay put.

Kaumagraphs Can Be Removed from Women's Nylon Hosiery

We found that we can successfully remove all Kaumagraph marks in a short time. The method we use also removes all previously applied finishes.

We place the stockings in bags and load them into a 50-lb. Smith-Drum rotary dyeing machine containing 90 gal. of water brought to a temperature of 100° F.

Three pints of Toluol and three pints of Oleate liquid soap are added, and the temperature is raised in 15 min. to 180° F. The goods are run for 1 hr. at this temperature and examined to check if they are completely free from marks. When the goods are free from Kaumagraphs, they are rinsed well at 130° F. *James Rowatt, Hamilton, Ont.*



AlSiMag® eyelets

Can be made in any shape, size or design — with NO mold, tool or die charges. Bright or satin finish. The unusually long life of AlSiMag eyelets makes them the LOWEST IN COST PER POUND OF YARN PROCESSED.

TEST SAMPLES AVAILABLE

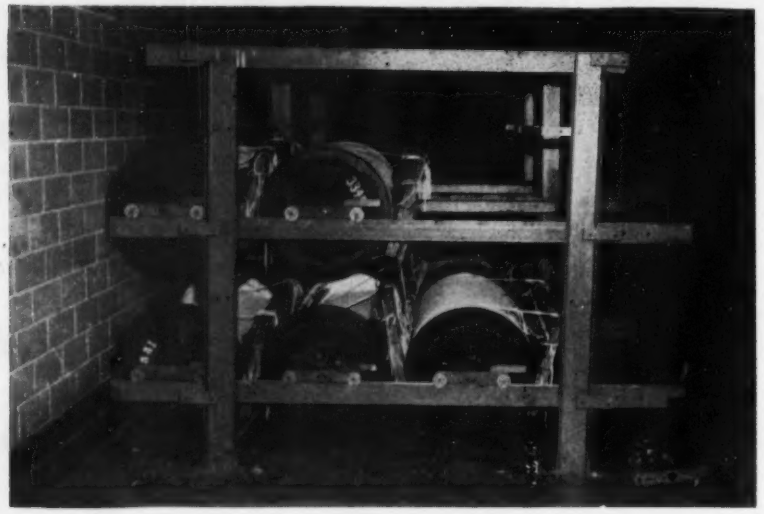
51ST YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, American Lava Corporation, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, American Lava Corporation, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411.

Channel-Iron Warp Rack Has Track for Rolling Beams



DRAWN WARPS are stored in the weave room on racks like this. Each rack holds 11 beams, complete with harnesses and drop wires.

All our replacement warps for the weave room are drawn in on a drawing-in machine. Our problem was storing the warps after they were drawn in and before they were needed in the weave room.

We built a storage rack for the drawn warps that solved our problem.

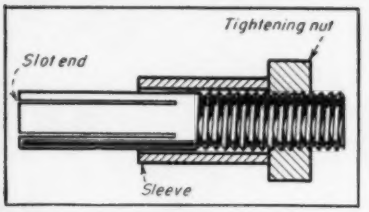
The rack is made from channel iron and is welded together. There is space for four beams on each of the two lower levels and three beams on the top level—a total of 11 beams per rack.

Warps are placed in the rack with an overhead hoist. The same hoist takes the warps off the rack and brings them to the loom when they are needed.

When a warp is to be placed in the rack, the hoist holds the beam in front of the compartment of the rack where it is to be stored. An angle iron 14 in. long, with a roller at each end, is placed on each beam gudgeon, and the warp is rolled on a track to its position in the rack.

Since the warps are stored compactly, little space is taken in our weave room for their storage, and our weave room looks neat. *White Horse Mill*

Make Your Own Wrench To Remove Sunken Nuts



FORCE THE SLIT END over a sunken nut, tighten the sleeve down to insure a good grasp, and remove the hard-to-reach nut.

Here's an easy way to remove sunken nuts.

Take a piece of pipe a little smaller in diameter than the nut you want to remove. Slit one end several times with a hacksaw. Put a left-handed thread on the other end.

Get another piece of pipe just large enough to slide over the threaded end of the first piece. Put a nut on the threaded end so that you can force the section of the larger pipe down over the smaller pipe.

To remove a nut, place the slit end of the pipe over the nut. Screw the tightening nut down so that the outside pipe closes the slits of the inside pipe until you have a firm grasp on the sunken nut. Then just unscrew the sunken nut. The left-handed thread will make the grip tighten.

Particularly obstinate nuts may be encouraged to come out if you put some graphite on the head of the nut (to insulate it) and play a blowtorch down inside the pipe. *W. E. Warner, Essex, England*

$500 for Best Kink in 1953
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

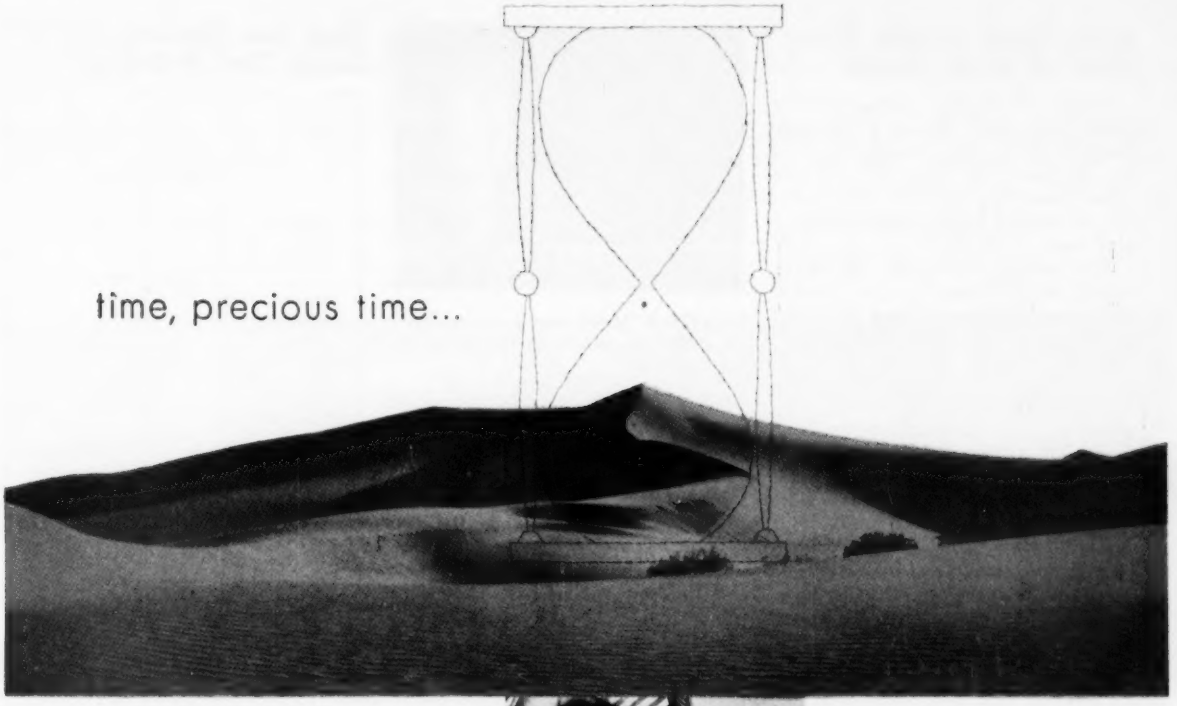
Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month. $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

time, precious time...



No gift so precious as the gift of time. Time to relax. Time to have fun. Time to think. Time to grow. And no contribution of modern science has given modern women a richer bounty of time in the hand than Du Pont's modern-living fibers. Nylon, "Orlon," "Dacron" ... here are fibers that widen the textile world's horizons, fibers that open the door to what your customers want today. Fabrics that save precious minutes day-long, year-long—fabrics that wash faster, dry faster, need less ironing, fabrics that wear longer, save on shopping, fabrics keyed to the busy pace of today's lives . . . engineered *right in the fibers* to enrich modern living with the boon of extra time. You can count on Du Pont's vast fiber research to answer your problems in developing and selling fabrics keyed to the way your customers live today!

Du Pont's Modern-Living Fibers

NYLON | RAYON | ACETATE | ORLON® ACRYLIC FIBER | DACRON® POLYESTER FIBER

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

 For more information, write direct or use Reader Service post card.

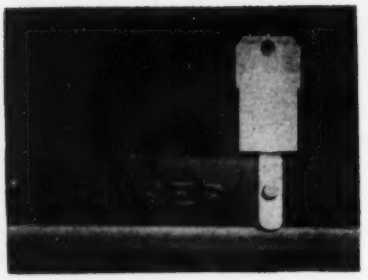
Keep Loom Tickets Clean With a Metal Holder

We've always had a lot of trouble with the tickets we keep on each loom to show vital information on the style of cloth being woven. The ticket shows the style of cloth, number of the pick gear, number of filling and warp yarns, etc.

Our trouble started after the ticket stayed on the loom for a few weeks. Oil from the loom motions splattered on the card and it soon became unreadable.

We now have a holder for all our looms that keeps the ticket clean. The holder is made from light-gauge sheet metal and is crimped on three sides to fit the card. A bracket ⅛ in. thick is soldered to the back of the sheet-metal holder. The bottom of the bracket has a ⅛-in. hole bored in it.

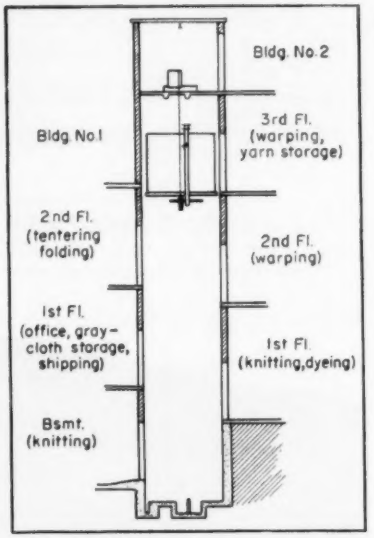
A hole is bored in the center of the front arch of the loom and is tapped for a ⅛-in. capscrew so that the bracket can be fastened to the loom.



THIS STYLE TICKET can be seen readily, is out of the way, and makes the arch of the loom look neat.

The card is kept clean in its new position; it can be read easily from the front of the loom; and, since the card is longer than the holder, the card can be slipped out of the holder easily and replaced when the style of cloth is changed. *White Horse Mill*

How One Elevator Serves Two Buildings



AN 82% SAVING in materials-handling costs is attributed to this elevator installation by mill officials. Total rise is about 35 ft., and there are three stopping points in each of the buildings served.

Fulton County Silk Mills, Gloversville, N. Y., was used to handling silk, which is relatively light in weight. Hand hoists were all the mill needed for vertical transportation.

But the synthetic fibers the mill is using today are too heavy to handle by hand. Packages are larger, too. The mill's problem in vertical transportation was further complicated by the fact that, although the two main buildings are adjoining, the floors are at different levels.

The problem was solved by installing a light-duty Otis freight elevator in the taller of the two buildings. The car has doors at each end so that the elevator can serve all floors in both buildings. Each building has three stories, but there are six stopping points for the elevator.

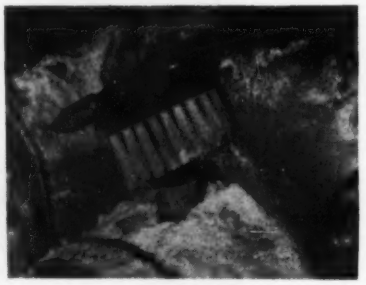
Use a Toothbrush To Clean Oil Cups

Oil cups should be cleaned of dust and dirt before the lid is lifted so that the oil-can spout may be inserted. Oil cups are often in awkward places that will not allow this cleaning to be done easily.

We have solved this problem by fitting a brush to the oil-can spout. The spout, with its brush, can be pushed into very narrow spaces, and the brush can be applied to the lid and surroundings before the lid is lifted.

The brush illustrated is actually an old toothbrush with the handle sawed off. Any suitable brush of small size could be used, but a toothbrush is just right.

Nonmetallic brush backs can be secured to the metal spout of the oil can by inserting a couple of wood screws into the brush and then soft-soldering the heads of these to the spout.



The spout tip projects beyond the brush and can fit easily into the oil cup. *Clifford T. Bower, London, England*

Best-Kink Award for January

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for January, according to TEXTILE WORLD reader-judges, was:

"Here's an Easy Way To Clean Knitting Needles"

Safety Suggestions

► Be sure that all motors are blown down once a week to reduce the danger of fire.

► When you make repairs on fly frames, be sure that the safety latches are "on" and working properly.

► Keep air hoses free of machines when you blow off. A sudden slackness in the hose can cause you to fall. *Avondale Sun*

"We wouldn't want to dye without the control these instruments give"

G. M. TRABER, JR.
PRESIDENT & TREASURER
G. M. TRABER III
VICE-PRESIDENT
K. P. SMITH
SECRETARY
W. S. TRABER
ASST. TREASURER

THE PERRY KNITTING COMPANY
(INCORPORATED)
MANUFACTURERS OF
KNITWEAR
NITEY NITE SLEEPING GARMENTS
PERRY, N.Y.

January 6, 1953

Taylor Instrument Companies
90 Ames Street
Rochester, New York

Gentlemen:

Because we are satisfied with the results of the first two Taylor controls on our dye tubs we now have them on all of the tubs.

It is not a matter of guesswork now but a fact these controls have increased the consistent quality of the dyework and we would not want to dye without the control which these instruments give.

Quality control is a major factor in the continued success of "Nitey Nites" and we are happy to include Taylor Instruments among those that help to do the job.

Yours very truly,
THE PERRY KNITTING COMPANY
Karl W. Monson
Karl W. Monson
General Superintendent

KWM:kp

Says Mr. Karl W. Monson, General Superintendent of the Perry Knitting Company of Perry, N. Y., and we're very happy he feels that way about Taylor's contribution to the success of "Nitey Nite" Sleeping Garments. Mr. Monson is referring to Taylor's Control System for Dyeing which automatically controls the entire process from starting the steam supply until the end-of-cycle signal flashes.

The main advantages of this system are that it **assures uniform dyeing conditions, cuts operating costs, preserves quality of dyed fabric, eliminates costly errors of manual operation.**

Perry Knitting Company is typical of the many mills which started out with one or two Taylor Control Systems and have ended up with complete instrumentation on all units.

There are at least 25 different ways in which Taylor controls can help the textile industry cut costs and maintain quality. Why not call in your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y. and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

Prevent Waste Filling From Stationary Magazines

We've always had a lot of waste filling in our cloth woven on W-model looms. The waste filling is usually about 12 in. long and weaves into the cloth soon after the transfer of a bobbin.

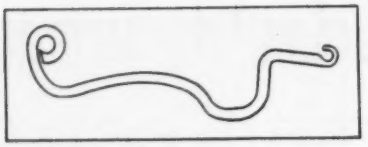
When the temple knife cut the filling from the filling-end remover, the filling end flew back into the shuttle box. The shuttle cut the filling end on the next pick and carried the loose filling into the warp shed, where it was woven into the cloth. We have made a hook that we place under the magazine to catch the filling end when the temple knife cuts it.

The hook is made from $\frac{5}{16}$-in. steel rods 6¾ in. long. One end of the rod is bent to form an eye that is almost closed. The other end is circular to hold the rod to the loom.

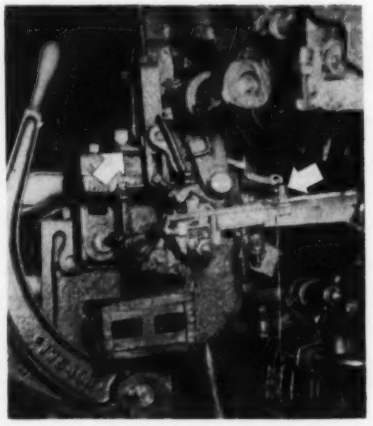
The rod is bent so that when the circular end is fastened to the bolt that holds the magazine stand to the breastbeam, the eye is directly inside the filling feeler.

When the filling is transferred, the filling end from the filling-end holder slides through the eye of the rod and is held there until the temple knife cuts the filling end. Then the eye pulls the cut filling end away from the lay so that the shuttle cannot strike it.

Since we've been using the eye, our waste filling has been greatly reduced. *Ernest Shackleton, Huntingdon, P. Q.*

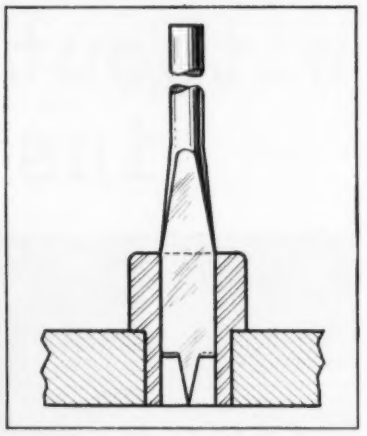


THE CIRCULAR PART of the rod fastens to the magazine stand. The hook holds the filling ends near the filling feeler.



THE FILLING END snaps back out of the way of the lay when it is cut. The waste end is removed by the magazine hand.

Increase Flat-Bit Life With a Guide Bushing



PROTECTIVE BUSHING increases life of flat bits.

Flat bits for precision boring in wood have sharp cutting corners that wear faster than corners of twist drills. A guide bushing protects these delicate corners and allows the bit to be removed from the work but not from the bushing.

These bushings may be used in standard holders that are mounted on the columns of some types of drill presses.

Lug Stops Sweep-Stick Wear

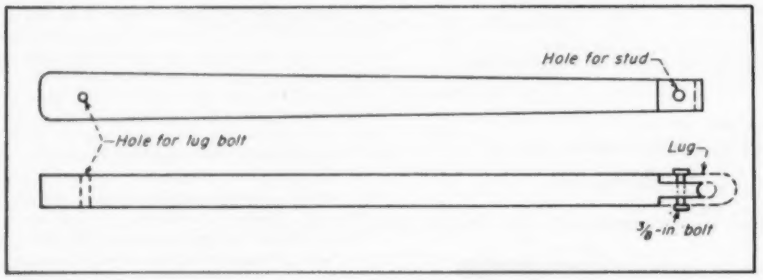
The hole in the sweep stick on C&K looms wears rapidly at the picking-sweep-arm stud. When the hole becomes worn, the loom slams off a lot. Sweep sticks often have to be discarded when only the hole is worn.

We made a hickory sweep stick that does not have a hole to wear. The hickory also gives us some flexibility when the shuttle boxes hang.

The hickory stick is cut to a length just even with the center of the hole for the stud. The end of the sweep stick next to the picker stick is the same as the old sweep stick. On the stud end, the sweep stick is cut concave to cover one-half of the stud.

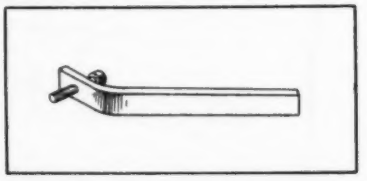
The stud end of the sweep stick is mortised to recess a short lug, and a ⅜-in. hole is bored for a bolt to fasten the lug to the sweep stick. Since the hole is bored in the exact place, the lug is snug against the picking-sweep-arm stud, and lost motion is prevented.

The lug lasts for two years and then has to be replaced, but the sweep stick is still good. *H. E. Linderson, Eastford, Conn.*



LOST MOTION IS ELIMINATED from this part of the picking motion when you use a lug on the end of the sweep stick.

How to Shorten Screws



HOLE IN HOLDER fits screw and allows you to grind off just the right amount safely.

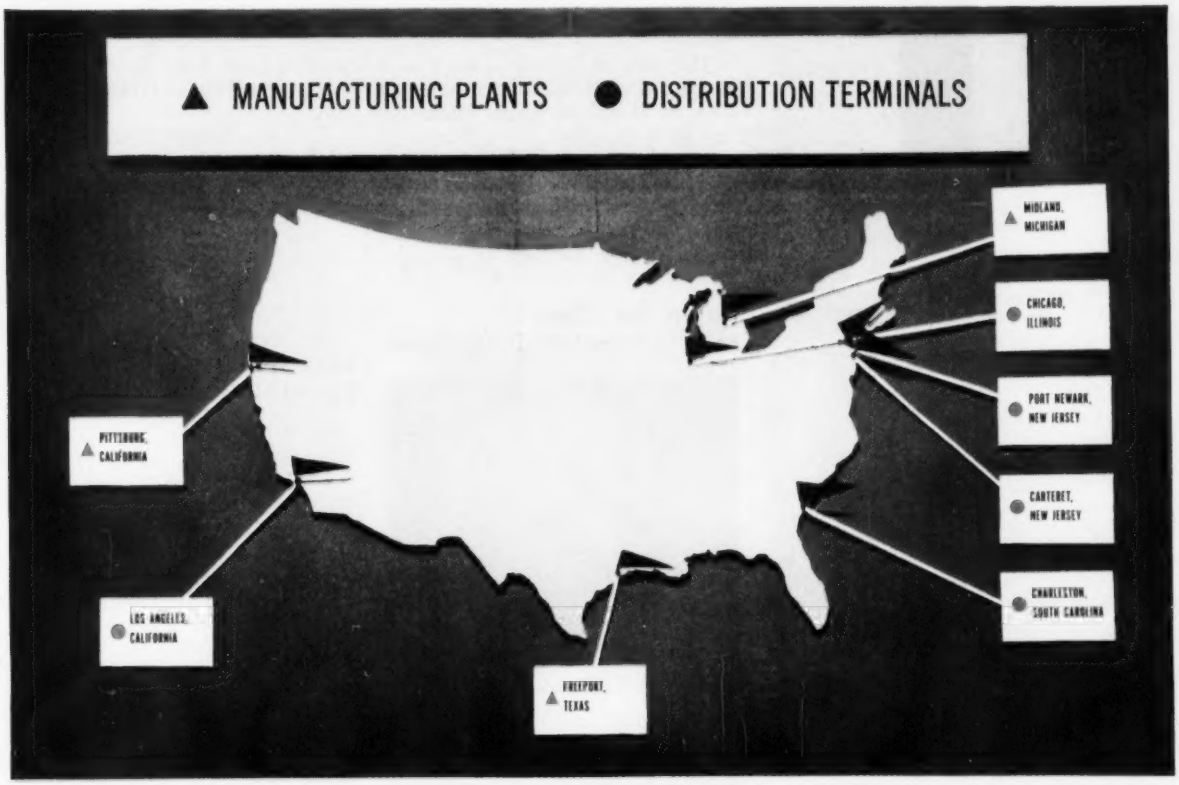
Ever try to hold a small screw to grind off excess length? A vise isn't satisfactory if you're going to saw it off, and your fingers are too valuable to hold the screw close to a grinding wheel.

Take a strip of steel 3 in. long, ¾ in. wide, and 1/10 in. thick. Drill and tap in one end a hole the same size as your screw. Bend the strip to make holding easier.

Now put your screw in the hole and let the amount you want taken off protrude. You can hold the screw against a grinding wheel safely and take off just the right amount. *W. M. Scott, Middlesex, England*

DIVERSIFIED DISTRIBUTION IS DOW'S KEY TO DEPENDABLE CAUSTIC SODA DELIVERY

Strategically located manufacturing plants and shipping terminals provide fast, efficient, nation-wide service



As a user of caustic soda, you are particularly concerned with prompt, dependable delivery, for it means that your production schedules can be maintained. In order to serve you in the best possible manner, Dow has created a diversified caustic soda distribution network—*a network that can serve all industries throughout the country from a minimum of two shipping points.*

Your company can greatly benefit by Dow's distribution system. With three manufacturing plants, which also serve as shipping centers, and five additional distribution terminals, Dow can serve your requirements fast and efficiently wherever you are.

Dow's rigid quality control assures you of uniform, high quality caustic soda at all times. Whether you use caustic soda solution, solid, flake or ground flake, you can be certain that the modern containers are designed to maintain the high quality of the caustic soda and are safe and convenient to use.

The next time you order caustic soda, be sure to call on Dow and take advantage of the many distribution and production benefits.

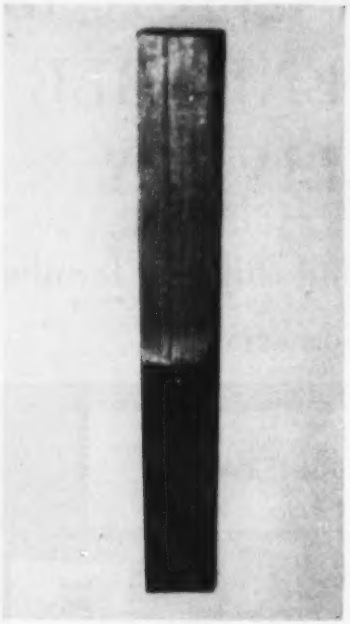
Write Dow today for the Caustic Soda Handbook. You will find it a valuable addition to your files. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

 For more information, write direct or use Reader Service post card.

Use a Gauge To Position Reed Cradles



MAKE THE GAUGES from 6-in. lengths of strap iron ¾ in. wide and ⅛ in. thick. Cut one-half the length down to 3/32-in. thickness on a milling machine.

It is common practice on looms with yielding reeds to position the height of the cradles over the lay ends with the point of a small screwdriver. This is not an accurate way to set the reed cradle since no special thickness dimension is used.

If the reed cradle is set too low, it will drag and make wavy cloth and set marks. If the cradle is too high, the glass rod will hold the warp shed up and cause the shuttle to be thrown high.

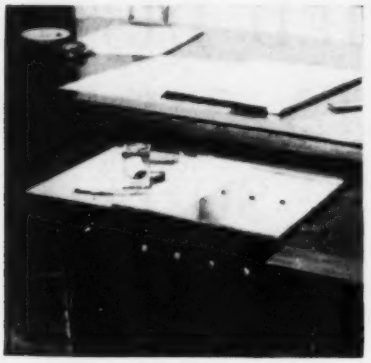
We have made gauges that we use to set our reed cradles to a standard height over the lay end. When we set a reed cradle now, we loosen the hanger stands on each side of the loom, insert a gauge under each end of the reed, retighten the hanger stands, and remove the gauges. The reed cradle is then in the correct position. *James Adams, High Point, N. C.*

Safety Tips

► Don't climb up on any machine. Get a ladder, and get up there the safe way.

► Always have fire extinguishers refilled immediately after use. Don't put them back on the rack where the refilling might be overlooked.

Two New Angles For Fabric Analyzers



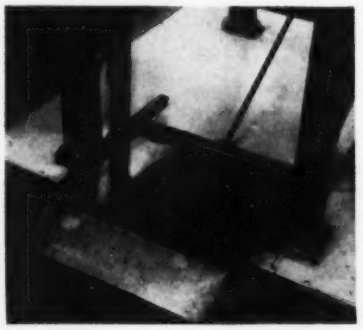
LIGHTED BOX clamps on desk pull-out shelf and uses different light for white and colored fabrics.

The idea of putting a light in a box to analyze fabrics is not new, but a couple of new angles are interesting enough to describe:

1. Attach the box to the pull-out shelf of your desk. The lighted surface will then be at a convenient working level. Use clamps to hold the box to the shelf, as shown in the picture.

2. Use a colored light or glass for white fabrics or gray goods, and use a white light or glass for colored goods. *R. Alderete, Santiago, Chile*

Ramp for Cans Means Less Lift, Less Push



FOR CAN GILLS, this platform makes can placement and removal easier. Ball casters on the can bottoms allow the cans to be pushed easily. Cans are pushed up the sloping runway and are held in place by small slots in the back of the platform.

Hints on Running Twisters For Multiple-Ply Yarns

Sometimes you're called upon to make three- or four-ply yarn on a twister designed for two-ply. These suggestions may help in such an emergency:

1. Put your best operator on the job.

2. Use supply packages as large as possible to minimize runouts.

3. Always have the plied yarn pulled back to the break in the event one end does break.

4. If creel capacity is a problem, try running every other spindle.

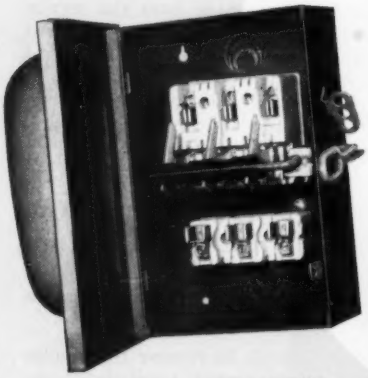
5. Break out all cones when there is still yarn on all the cones. Rewind and use in the next set. This procedure will pay in the long run.

Try This Kind of Wire For Wet Locations

NEOPRENE-JACKETED WIRE is arousing interest for use in locations where heat, moisture, and chemicals are found in combination. The wire can be used for power and control circuits, feeder circuits, and most outside wiring. Jacket deterioration is said to be minimized.

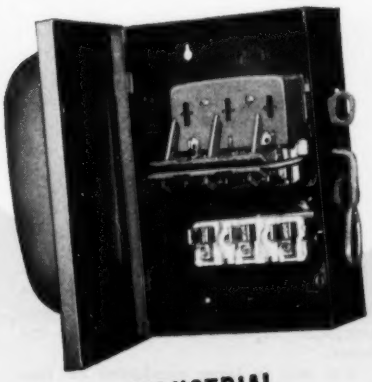
3 LINES OF SAFETY SWITCHES *for* 3 DIFFERENT MARKETS

one line can't do two or three jobs without compromising price and performance!



GENERAL PURPOSE

90,000 line designed for residential, commercial and other applications where price is limiting and the service factor is not great.

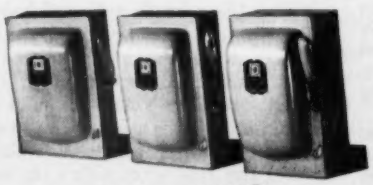


INDUSTRIAL

40,000 line designed for general industrial or institutional and commercial applications where the service factor is greater and price is an important consideration. MEETS BOTH GOVERNMENT AND NEMA SPECIFICATIONS FOR TYPE A SWITCHES.

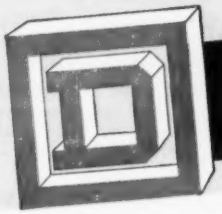
HEAVY-DUTY INDUSTRIAL

80,000 and 50,000 line designed for mass production industries where price is secondary to continued performance under conditions of severe service and maximum safety. The 50,000 line is used where space is limited. BOTH ARE TYPE A but go far beyond those requirements.



UNIFORM STYLING

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY

Questions AND Answers

Here Is a Layout for 65% Wool, 35% Dacron Top

Technical Editor:

Could you give us a layout for making 250-gr.-per-yd. sliver with a 65%-wool and 35%-Dacron blend. We want to use 6-in., 64s domestic wool and 5½-in. Dacron. (9629)

Assuming that you want to blend in the first gilling operation after combing, here is a workable layout.

First Finisher or Can-Gill Box

If comb sliver weighs 0.75 oz. per 5 yd., use 20 doublings going into the box and a draft of 6.45. The weight of wool sliver delivered should be 186 gr. per yd.

Second Finisher or Baller-Gill Box

Use five doublings of wool sliver made on the first finisher and five doublings of Dacron, 100 gr. per yd., or 10 doublings of Dacron, 50 gr. per yd., and a draft of 5.72. The weight delivered should be 250 gr. per yd.

Note: Total weight entering the first finisher must be 1,200 gr. per yd.; therefore, if comb sliver varies from 0.75 oz. per 5 yd., it will be necessary to use more or fewer doublings to keep the total weight entering at 1,200 gr. per yd.

Preset Gray Tulle and Set Tensions for Proper Yield

Technical Editor:

We dye and finish nylon tulle, and we are having a problem with yield. We scour, bleach, and dye in an open beck; and we finish and cure the tulle on an enclosed pin frame. No matter how we vary the processing, the yield comes out short of the yards per pound of gray cloth set by our customers.

Is it possible to get the required yield? (9631)

Nylon fabrics can be set by heat treatment when they are either wet or dry. No shrinkage will occur in subsequent processing if the heat setting is done while the goods are under tension and at a temperature higher than they will be subjected to later.

Preset the fabric in the gray on the pin frame, and adjust the tensions, both warp and filling, to give a satisfactory out-turn and proper width. The temperature of the frame should be higher than the temperatures encountered in the open beck.

Your difficulty is probably caused by contraction of the fabric in the beck without tension, and by insufficient tension on the pin tenter to offset the contraction or shrinkage you now have.

There will naturally be fewer holes per inch if the goods are set in the gray, but the openings will be slightly larger.

Here is a precaution if you try this method. Some nylon sizes become more difficult to remove in the boil-off if the goods are heat-set in the gray state. Process a small yardage to determine this possibility. If you do not want to heat-set in the gray, the only recourse is to take the out-turn you are getting with your present method as the best you can do.

Correct Twist Multiplier Reduces Spinning Breakage

Technical Editor:

Why should the ends down increase in spinning when roving twist is reduced?

A test at our mill has been running several weeks on reduced roving twist on the spinning frame, but the results have been clouded by the undetermined cause for increased yarn breakage. Generally, the results so far are as follows:

From 4.35-hk. roving with 1.10 TM made on a Saco-Lowell long-draft FS-2 we are spinning 40s warp combed cotton on Saco-Lowell frames with a 4.00 TM.

Skein break has not been affected on test yarn.

Evenness-test results are from "no change" to "better" on a Brush Uniformity Analyzer for both roving and yarns.

Breakbacks in the spinning creel from reduced twist have actually been less than before, probably because new skewers completely replaced old ones on the test frame.

The test is being conducted on four spinning frames.

Reduced twist in roving should make the spinning frames' work easier in drafting, and the work should run better. However, with the exception of increased pin-roll laps, no classification can be given the increased ends breakage. Top-clearer flats accumulate waste about twice as fast on the sample frames as on other frames, which run a 1.30 TM on roving going into 40s warp.

We have traveling overhead frame blowers, but no harmful effects seem attributable to their action on the roving in the creel. (9632)

Theoretically, reduced twist in the roving should result in more-uniform drafting on the spinning frame with more-even yarn and lower end breakage. However, in actual mill practice it doesn't always work out this way.

Sufficient twist is required in the roving to carry it from the creel to the bite of the back roll without stretch or breakage. Roving with insufficient twist can be stretched badly without actually breaking. The TM of 1.10 given in the organization does not appear sufficient to hold the fibers compactly while they are being processed. The increased top-clearer waste is one indication of this fact. Twist multipliers recommended for this type of work range from 1.20 to 1.35.

Overhead cleaners must be considered when the required twist is determined. A strong blast of air directed against a loosely twisted strand of roving can loosen it up, prevent fiber-to-fiber contact, and cause fluffy places to be delivered to the back roll. The direction or intensity of the air stream can be changed to correct this condition.

The indications are that the increased breakage is caused by insufficient twist in the roving, since no changes were made from the regular work except a reduction of roving twist from 1.30 TM to 1.10 TM. Try slight increases of roving twist, one tooth at a time, until the condition is corrected. Some TM between 1.18 and 1.25 should be satisfactory.

Clean Looms Often If You Weave Plastic-Coated Yarn

Technical Editor:

We're weaving plastic-coated yarns. How can we keep the looms clean? (9630)

It's difficult to remove the residue from plastic-coated yarns from the drop wires and reeds if the residue from thermoplastic yarns is allowed to cake up in these loom parts.

Acetone can be used successfully to remove the residue from reeds and drop wires out of the loom. If acetone is used on the loom, the warp will be injured and the paint will be removed from the loom.

Clean the reeds and drop wires frequently, say at every cut mark, to prevent heavy accumulations of plastic residue. Use a brush with stiff hair to clean the reed after the hand rail has been removed. Then push the reed up and down against the warp ends to remove the residue. Varsol or one of the chemical cleaners mixed with water will possibly soften the plastic residue.

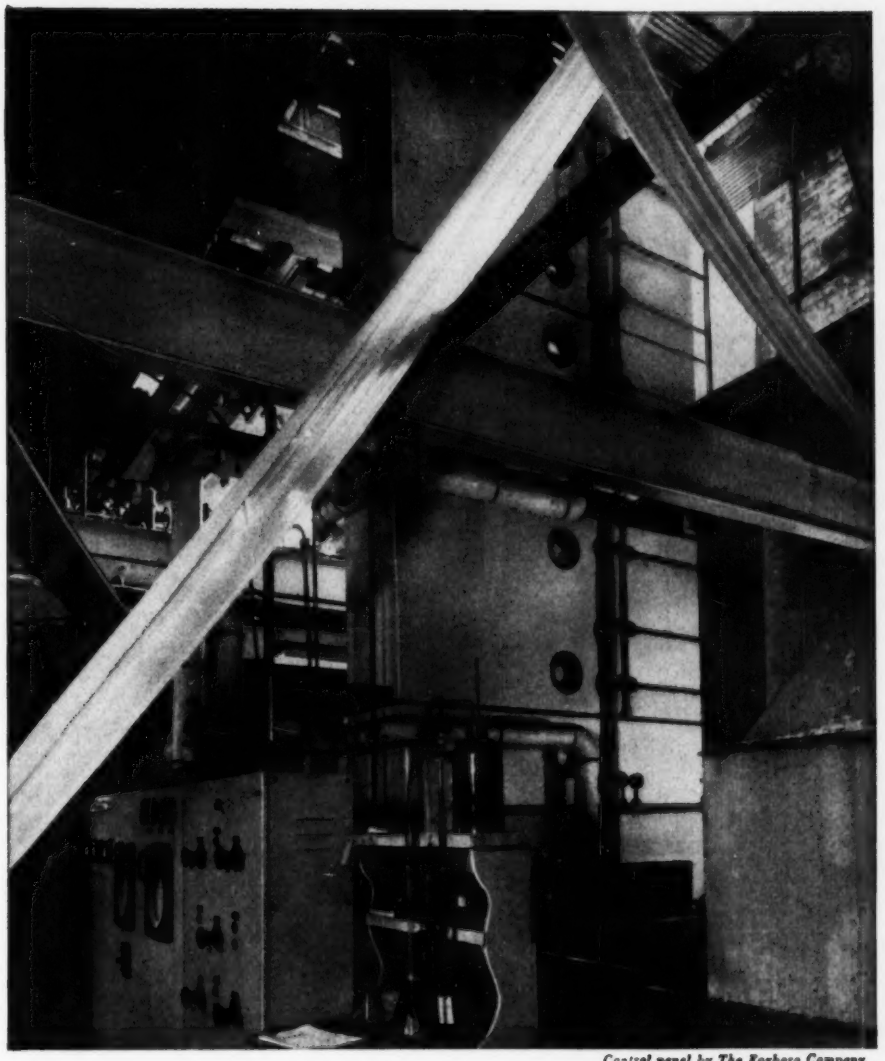
Wet the drop wires with a rag saturated with a cleaner, and clean the drop wires with the rag. Move the drop wires against the warp ends and then dry the drop wires with a dry rag.

While warps are out of the loom, clean the loom thoroughly. A portable steam-jig cleaner will cut off a lot of the residue. Loom leathers must be

(Continued on page 252)

BECCO

HYDROGEN
PEROXIDE
AND OTHER
PEROXYGEN
CHEMICALS



Control panel by The Foxboro Company in plant of Paramount Printing and Finishing Company, Pawtucket, R. I.

Continuous J-Box Bleaching with Hydrogen Peroxide

Continuous WET J-Box bleaching is now attracting industry-wide attention as the greatest development since the original Becco J-Box.

The wet box supports and "lubricates" the goods, reduces friction in the curve of the J, expedites flow, reduces pulling strain, eliminates snarling and tangling. Speeds run as high as 400 yards per minute. As in conventional J-Box processing, it is quite possible to receive gray goods in the morning and ship finished goods the same day.

The WET J-Box process gives a preliminary wash which reduces surface deposits and improves dyeing quality. Write for complete information or talk with any Becco representative.

Buffalo Electro-Chemical Company, Inc.

DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

Sales Agent: BECCO SALES CORPORATION, Station B, Buffalo 7, N.Y. Buffalo • Boston • Charlotte • Chicago • New York • Philadelphia • Vancouver, Wash.

POWELL VALVES
actually require
less maintenance
Fig. 2491.—Stainless Steel O. S. & Y. Gate Valve for 150 pounds W. P. Available in a variety of other corrosion-resisting metals and alloys. Also made with screwed ends.
First, because they are specifically adapted to the service conditions under which they must operate.
Second, because they are engineered—in design, materials, and workmanship—to stand up under those service conditions.
And the proof lies in the actual records of the thousands of Powell Valves serving all branches of industry.
The Wm. Powell Company
Cincinnati 22, Ohio
DEPENDABLE VALVES
SINCE 1846
POWELL
BRONZE, IRON, STEEL AND CORROSION RESISTING VALVES

Free Technical Information

Reader Service

MILL EXECUTIVES may obtain free for the asking . . .

. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

. . . FURTHER INFORMATION on
New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

WRITE ON THIS CARD

. . . to get more information on anything published in the editorial or advertising pages of this issue. If your inquiry concerns equipment or supplies, name the specific equipment or supplies involved. If your inquiry concerns anything other than equipment or supplies, you must state specifically the information you want.

. . . to send a Kink, a letter for Round Table, or a news note.

. . . to comment on anything appearing in this issue.

. . . to query the editors about any manuscripts you might wish to submit to them.

. . . to send an inquiry to the Questions & Answers department.

●

Cards require no postage . . . but be sure to give your name, title, mill connection, and address.

●

CIRCLE THE NUMBERS ON THIS CARD

. . . to request copies of trade literature described on the next and following pages or to get more information on New Textile Equipment, New Dyes & Chemicals, and New Useful Accessories described in this issue.

Dear Editor:

Please send me additional information on the following:

PAGE	SUBJECT	PAGE	SUBJECT
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Name..... Title..... Mill.....
Please print or write legibly

Street..... City.....(....) State.....

This Card Expires May 31, 1953 TEXTILE WORLD, MARCH, 1953

Please send me the following:

TRADE LITERATURE Number: F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 F13 F14 F15 F16 F17 F18 F19 F20 F21 F22 F23 F24 F25 F26 F27 F28 F29 F30 F31 F32 F33 F34 F35 F36 F37 F38 F39 F40 F41 F42 F43 F44 F45 F46 F47 F48 F49 F50

TEXTILE EQUIPMENT NEWS Number: T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35

NEW USEFUL ACCESSORIES Number: U1 U2 U3 U4 U5 U6 U7 U8 U9 U10 U11 U12 U13 U14 U15 U16 U17 U18 U19 U20 U21 U22 U23 U24 U25

NEW DYES & CHEMICALS Number: D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12

Name..... Title..... Mill.....
Please print or write legibly

Street..... City.....(....) State.....

This Card Expires May 31, 1953 TEXTILE WORLD, MARCH, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for March are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Unicomatex has cataloged its member companies by sections: Ingolstadt, spinning machinery; Mak, cards and frames; Schlafhorst, winders and warpers; Sucker, drying and sising equipment; B. Thies, dyeing and bleaching plants; Astra, dobby and jacquard looms; JKB, finishing equipment; and Monforts, finishing machines. **(F-1)**

A **portable warp-tying machine** for tying in warps directly behind the loom is described in a bulletin from Barber-Colman Co. Several models of the machine are available for tying in warps from a flat sheet, an end-and-end lease, or from either. Mobility in limited space is a feature of the machine. **(F-2)**

A **butt-tacking sewing-machine** application to woolens and worsteds is the feature of a bulletin prepared by The Merrow Machine Co. Performance data and the advantages of butt tacking are given. **(F-3)**

A **shuttle-truing machine** is described in a bulletin by Staubli Bros. & Co. All sizes of shuttles are trued, equalized, machined, grooved, planed, drilled, polished, and resharpened on this machine. **(F-4)**

Selvage uncurlers are described in a bulletin from Mount Hope Machinery Co. The uncurlers will guide knitted fabrics to all kinds of machines and are easily adjusted to all weights and types of fabrics. Prices and drawings are included. **(F-5)**

A **vertical trimming shear** that is operated by the sewing-machine attendant in a range with a de-speckling machine and scray is described in a bulletin from the Parks & Woolson Machine Co. The machine shears the entire length of cloth at speeds up to 150 yd. per min. **(F-6)**

Cogne spinning and twisting frames for cotton are featured in a pamphlet by Stellite. Spinning frames of over 3-in. gauge feature a patented spring-pressure device on the front rolls that can be independently adjusted for each cylinder. **(F-7)**

A **card-point tipper** is the feature of a pamphlet prepared by Dronsfield Bros. Ltd. This machine is used to retip dull points and is not intended to replace machines that grind badly worn points. Bevel-edged emery wheels tip cylinders in 30 to 40 min., doffers in 30 min. **(F-8)**

AUXILIARY EQUIPMENT

The Pressley fiber-strength tester is described in a pamphlet by Joseph M. Doebrich. The instrument and all accessories necessary for making tensile-strength tests are explained, and 11 photographs illustrate the cotton preparation and procedure. **(F-9)**

A **miniature variable-speed changer** is described in a bulletin by Metron Instrument Co. The instrument is designed for chart drives, indicators, recorders, and controllers. The packaged unit can be supplied with a choice of six speed controls. **(F-10)**

A **doffmeter** for loom application is the feature of a bulletin by Durant Mfg. Co. The meter stops the loom after a preset length of cloth is woven and insures uniformity of cuts. Three different drive arrangements from the sand roll are described. **(F-11)**

A **complete line of timing relays** is offered in a bulletin by Allen-Bradley Co. Applications and operational data are given for fluid-dashpot, pneumatic, and electronic timers. A selector chart is included. **(F-12)**

Hot-air slasher control is discussed in a bulletin by Minneapolis-Honeywell Regulator Co. Both the constant and variable-speed systems for controlling warp regain are discussed. Diagrams and installation pictures are included. **(F-13)**

A **portable hydraulic elevating table** is described in a bulletin from The Raymond Corp. This device looks promising for kinks and attachments. **(F-14)**

Push-pull controls are discussed in a pamphlet prepared by Simmonds Aerocessories, Inc. These controls are used on knitting machinery and looms to replace cast linkages and long bell cranks. The pamphlet lists the components of the controls and discusses push-pull control layout. **(F-15)**

Radiant heat for curing synthetic coatings, stabilizing nylon, curing resin finishes, preheating, and embossing is discussed in a pamphlet by Sill Industries. The fiber-glass heaters provide a temperature range from 130 to 700° F. and are built to any width. **(F-16)**

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT No. 64 (Sec. 34.9 P. L. & R.) NEW YORK, N. Y.

TEXTILE WORLD
330 W. 42nd Street
New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT No. 64 (Sec. 34.9 P. L. & R.) NEW YORK, N. Y.

TEXTILE WORLD
330 W. 42nd Street
New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

Reader Service (Continued)

A ceiling cleaner that continually sweeps the ceiling and automatically covers both sides of the rail on which it runs is described in a bulletin by The Louden Machinery Co. The cleaner has a totally enclosed motor. **(F-17)**

A speed-ratio tachometer is described in a bulletin from Weston Electrical Instrument Corp. The tachometer indicates stretch in slashing, shrinkage during the shrinking process, and the synchronization of machines in a finishing range. The operation of the instrument is explained. **(F-18)**

A direct-reading balance with a dial reading that can be operated in 20 sec. with practice is described in a bulletin from Fisher Scientific Co. The balance has a single pan. Capacities of 20, 100, and 200 gm. are available. **F-19)**

SUPPLIES AND CHEMICALS

"Color and Instrumentation" is the subject of a booklet written by E. W. Rhael and offered by Sandoz Chemical Works, Inc. The booklet describes the fundamental principles of color and its measurement. Users of dyestuffs will be especially interested. **(F-20)**

A crayon-color board with 36 color marks is available from Binney & Smith Co. The crayons are for use with either the chlorine or peroxide bleaching process. With this color board, you can see what Apple Green and Geranium Lake look like. **(F-21)**

"Material Handling" is the subject of a booklet by Wheeler-Brady, Inc. The booklet is a sample unit from the Wheeler-Brady cost-reduction training program. The booklet presents the fundamentals of materials handling and includes a checklist for your program. **(F-22)**

Metallic card wire and the card services offered by Proctor & Schwartz, Inc. are described in a bulletin prepared by that company. The manufacture of the wire is described, and reclothing is explained. Preparing the cylinder, winding, grinding, final winding, and final grinding are covered. **(F-23)**

A synthetic automatic-loom bobbin is the feature of a bulletin from American Paper Tube Co. The barrel is laminated paper, the tip is heavy plastic, and the rings are retained by thermoset plastic. The bobbins are supplied with or without electric-feeder ferrule. **(F-24)**

The Celliton dyes, Fast Navy Blue BA-CF, Fast Red Violet RNA-CF, and Fast Blue FFRN Extra Conc. are described in circulars by General Dyestuff Corp. The dyes are used for nylon and acetates, and dyed samples are included in each circular. **(F-25)**

A fire extinguisher that uses a fast-flowing dry chemical propelled from a nitrogen-pressurized unit is described in a bulletin from Stop-Fire, Inc. The extinguisher is said to kill the average fire in 3 sec. **(F-26)**

Corrosion prevention with metallized zinc or aluminum is the subject of a folder by Metallizing Engineering Co., Inc. Underground pipes and conduits, outside tanks such as sprinkler tanks, and steel products are said to last much longer without corrosion if metallized. **(F-27)**

A worsted oil, Twitchell 7421, is described in a bulletin from Emery Industries, Inc. Features are static control, low-viscosity emulsions, and excellent ageing characteristics. Performance and application data are given. **(F-28)**

Roll coverings and mill supplies are covered in a bulletin by Armstrong Cork Co. Chapters on the selection, installation, and maintenance of roll covers are featured, plus information on loom supplies and mill supplies. A buffer machine is also described. **(F-29)**

ENGINEERING AND MAINTENANCE

A directory of Link-Belt products and the Link-Belt Co. has been made avail-

DECREASED REPLACEMENT TIME means - INCREASED PRODUCTION...

5 SOLID REASONS show why today's high speed looms require less time for picker replacement when equipped with longer wearing Garland Rawhide Loom Pickers.

1. **REINFORCED STICK-HOLE** Molded rawhide reinforcements at the stick-hole cut down stick-hole wear in the new Garland picker. Result: *Longer picker life.*

2. **IMPROVED SPINDLE HOLE** The spindle hole is perfectly rounded, excavated, and strengthened by locked-in flanges at both ends. Result: *No reaming, no binding, stays round.*

3. **MOLDED FOR UNIFORMITY** The new Garland rawhide pickers are individually pressure molded to uniform dimensions. Result: *The elimination of filing and fitting.*

4. **STRENGTHENED PICKER HEAD** The stronger, heavier outside layer of rawhide eliminates the need for a rivet through the picker head. Result: *Perfect throw through a longer picker life.*

5. **FINEST MATERIAL KNOWN** Our long experience has taught us that only Water Buffalo Hides possess the strength and elasticity that are so necessary in building a picker to meet today's high speed requirements. They are *tough enough to stand up* under terrific punishment, yet will yield just enough to be kind to your shuttles, your sticks, and your looms.

Garland

Manufacturers of Rawhide Loom Pickers for over 80 years

MANUFACTURING COMPANY
SACO, MAINE

MOBILIFT "Stand-Ups" *Stand Out!*

MOBILIFT *Stand-Up* type Fork Lift Trucks *Stand Out* for efficient, low-cost materials handling in warehouses, terminals and plants because they get more work done faster.

Here's Why:

1. The operator gets on and off an ample size platform in a second or two. He works on his feet, has maximum all-around visibility.
2. MOBILIFTS are agile. Compact design, short over-all length, and MOBILIFT 360° steering mechanism makes ZERO inner turning radius and 57" outer turning radius possible (2,000 lb. model "E"). MOBILIFTS are long-time favorites for close, congested working areas.
3. LEV-R-MATIC push-pull controls speed all movements. NO GEARS TO SHIFT... push-pull levers for forward-back movement, elevating and tilting.
4. MOBILIFT air-cooled 3-cylinder engine delivers abundant, reliable power. Compact, precision-balanced, accessible for economical operation with minimum repair and service.

Let a MOBILIFT Sales Engineer show you why MOBILIFT *Stand-Ups* in your business will *Stand Out!* Write or wire MOBILIFT for complete information today. *No obligation,*

MOBILIFT Lev-R-Matic DRIVE

MOBILIFT CORPORATION

835 S. E. MAIN ST., PORTLAND 14, OREGON

2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
1113 Spring St. N. W., ATLANTA • 2724 Taylor St., DALLAS
2730 San Pablo Ave., BERKELEY

Reader Service (Continued)

able by that company. This booklet is not confined to the textile industry, but there is plenty of material of interest to it. An index lists the distributors and factory offices. **(F-30)**

Purifiers for small lines handling steam, air, or gas are described in a booklet prepared by The V. D. Anderson Co., Purifier Div. The purifiers are said to remove 990% of objectionable entrainment. The booklet contains everything you need to know to purchase, lay out, and install the purifiers. **(F-31)**

Having trouble with color matching? A Glover Tru-Hue lamp gives the constant equivalent of June noonday light, and a folder prepared by Sinclair & Valentine Co. tells about it. A color wheel revolves rapidly beneath two light bulbs to provide the correct light for color matching. **(F-32)**

A table of lubricants for Universal twisting and winding equipment has been made available by Universal Winding Co. The table shows the brand names and nomenclature that meets the specifications for the Universal equipment. **(F-33)**

Flexible tubing is described in a bulletin by Flexible Tubing Corp. The tubing is constructed of spring wire and coated fabric. One type is for dust removal and ventilation, and another type is for materials handling such as the transportation of cotton. **(F-34)**

Small vertical pumps are described in a bulletin by Allis-Chalmers Mfg. Co. The pumps are for side-wall or submerged mounting and are available in capacities to 250 gal. per min. for circulating and air-conditioning systems. **(F-35)**

Socket screws can be easily selected with a window-view calculator card that has been made available by Standard Pressed Steel Co. Line up the screw diameter and the windows show the correct dimensions for the standard screw. Special fasteners are out with the use of this calculator. **(F-36)**

Electric door openers are described in a folder published by Barber-Colman Co. The Barcol operators can be adapted to overhead, side, or vertical doors. Special control mechanisms can be provided—even a radio control from a battery truck. **(F-37)**

Floating-disk clutches are described in a bulletin prepared by The Carlyle Johnson Machine Co. Eight sizes of standard clutches with capacities from ¼ to 15 hp. at 100 rpm. are covered. The clutch is used by Universal Winding Co. **(F-38)**

Turbine generators are described in a booklet by Westinghouse Electric Corp. The six principle types of turbines are covered, and the characteristics of each in terms of delivered electrical power and process steam are given. **(F-39)**

"Lubrication of Draper-Diehle Power Transmitter Assembly" is the title of a bulletin by New York & New Jersey Lubricant Co. The bulletin recommends nonfluid oil rather than grease for this loom drive and gives methods of lubrication. **(F-40)**

Specification standards for lighting equipment are given in a booklet by the RLM Standards Institute, Inc. RLM stands for Reflector and Lighting Equipment Manufacturers, and any equipment that bears the RLM label has to meet the standards given in this booklet. **(F-41)**

A belt drive said to guarantee perfect rpm.'s is the subject of a pamphlet by New York Belting & Packing Co. The Gilmer timing belts have a positive drive with no elongation. The tooth-grip belt meshes with a grooved pulley to give the positive drive. **(F-42)**

GENERAL

"The Problem of Maintenance Costs" is the title of a booklet by R. S. Aries & Associates. The booklet lists the obstacles to good maintenance, such as an uninformed staff, and describes the con-

How do you insure $746,200,000?

The whole textile industry would like to know the answers to that question... because they spent $746,200,000 on textile mill modernization last year!

While we don't have all the answers, here's one good way of insuring that part of the investment that was spent on machinery . . . and a very simple way, too! JUST ADOPT THE COMPLETE LINE OF CITIES SERVICE LUBRICANTS FOR YOUR OPERATION.

Cities Service Lubricants...specifically designed for the textile industry...are top insurance against costly wear and parts failure. With these quality products you're assured of cleaner machine bearings and shafts, and cleaner finished goods, too. With them you can keep friction, due to gumming and power load, down to the barest minimum . . . KEEP PRODUCTION AT MAXIMUM.

Why not use Cities Service as the single dependable source for lubricants exactly suited to your operation? Test them by turning over your most stubborn lubricating problem to a Cities Service Lubrication Engineer. He wants to help you. He can help you. Simply write CITIES SERVICE OIL COMPANY, Dept. C-27, Sixty Wall Tower, New York City 5.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

is

coil-itis* increasing your temperature problem?

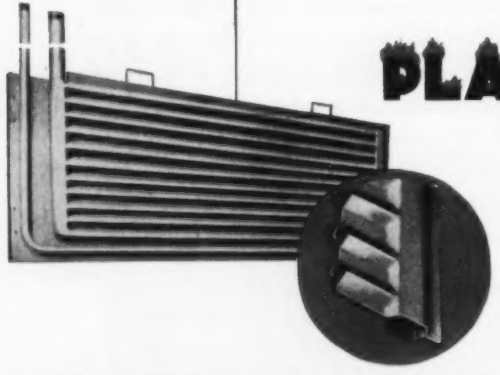
Here is a new treatment for solving your heat transfer problems that is as revolutionary as a new wonder drug. It stops coil-itis* cold . . . It eliminates the many troubles that have plagued industrial heating and cooling practices due to the use of old-fashioned, outmoded pipe coils. This revolutionary new unit, called a Platecoil, heats or cools 50% faster and takes 50% less space in the tank. It simplifies maintenance and saves hours of downtime.

Write for bulletin P32 today!

PLATECOILS SAVE 50% IN HEAT TRANSFER COSTS

PLATECOILS COOL QUENCH OIL TANK FOR ⅓ THE COST

At the K-D Manufacturing Company, Platecoils are proving more efficient, yet cost only 1/3 as much to install. Ask about other case histories.



PLATECOIL

REPLACES PIPE COILS

*

Coil-itis — Diagnosed as tank heating and cooling problems. **Platecoils** — the prescription for solving pipe coil problems.

PLATECOIL DIVISION, KOLD-HOLD MANUFACTURING CO., LANSING 4, MICHIGAN

sulting services offered by this firm. **(F-43)**

Industrial fabrics are described in a booklet by Wellington Sears Co. The booklet is aimed at a nontechnical audience and explains in simple language the variety of fibers and fabrics used in industry. Applications such as belts, tires, footwear, automobile tops, and tents are shown. **(F-44)**

Interested in local economic research? If there is a college around, a joint community-college research program can be set up to investigate local problems with grants from several of the big foundations. The program is described in a booklet by the Committee for Economic Development. **(F-45)**

A payroll plan said to be the fastest known way to produce paychecks is described in a folder by Remington Rand Inc. It's a stub-check system handled on an accounting machine with an automatic shuttle carriage. **(F-46)**

A pocket-sized wool-grade card has been revised and made available by The United States Testing Co. The grades are based on micron diameters and top numbers. The card also has a chart showing diameter distribution of standard and substandard grades. **(F-47)**

The business outlook and the presidential-election results are the subject of a talk by Elliott V. Bell, editor and publisher of *Business Week*, that has been made available in a booklet by *Business Week*. The economic boom should still be going strong, according to Mr. Bell. **(F-48)**

"The Aniline Story" is the title of a pamphlet by Allied Chemical & Dye Corp., National Aniline Div. The pamphlet presents the history of aniline, the first commercial organic chemical to be synthetized. **(F-49)**

"How Acetate Is Made" is the title of a folder by American Viscose Corp. The manufacture of acetate rayon is explained in 17 paragraphs with an illustration for each. **(F-50)**

Avondale Can Conversion

(*Continued from page 97*)

removed simply by taking out the screws to convert the coiler back to take a 12-in. can. The cost, including labor and castings, was $2.40 per ring.

One other drill-and-tap job was necessary for the coiler conversion: the holes for the intermediate-gear stud. The intermediate gear had to be changed to a size large enough to offset the larger turntable from the coiler stand. A 24-tooth gear allowed enough space for the turntable, and this gear was selected as the intermediate gear. The other gear units in the coiler mechanism were changed to give the gear-train ratio that the Catherine plant wanted. The total of four gear changes cost $8.85 per card. This cost brought the total cost to $11.25 for each coiler conversion.

Card Grinders Did the Work

But what about the labor charge for the conversion? The card grinders converted the coilers during odd times of the day when they weren't attending

What a Hit!

BOGER & CRAWFORD SPUN NYLON YARN!

You never miss—when you specify Boger & Crawford spun nylon yarn 60/2 and 80/2 ply!

Scores *perfectly* whether you use it for weaving or knitting sweaters . . . skirts . . . stockings!

Available in 20 wonderful fast colors . . . with color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

FREE SAMPLES sent promptly. Write today

The Quality of Boger & Crawford yarn is guaranteed —the highest tribute we can pay it!

SIGNED Frederick Boger

BOGER & CRAWFORD

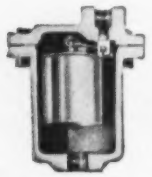
K & E. Venango Sts. • Philadelphia 34, Pa.

Double Drainage Capacity with Clark DUO-STEP Traps

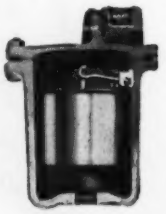
Engineers know that the effective drainage of condensate from steam lines is a matter of trap capacity. How much condensate can a steam trap of a given size drain in a specific time? The more it can drain the more efficient the trap.

Many tests over a period of years prove that Clark Duo-Step Steam Traps, using the patented double fulcrum principle, can drain *twice* the condensate of ordinary traps.

So why not give Clark Duo-Step Traps a trial on your steam lines and discover for yourself their money-saving features. Phone, write or wire for information.

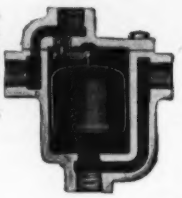


CLARK "701"-D (DUO-STEP) TRAP. A forged steel trap for pressures up to 500 P.S.I. and temperatures of 750°F. Equipped with "double-drainage" Duo-Step Leverage and Venting, Clark-loy seats and discs. Pipe sizes ½" or ¾".

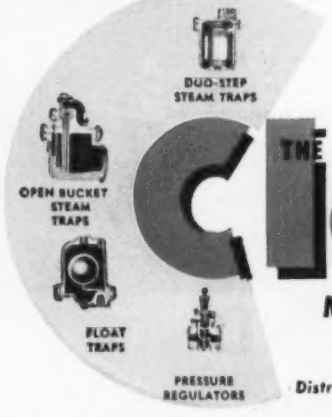


SERIES "80"-D (DUO-STEP) TRAPS. Cast semi-steel construction for pressures up to 250 P.S.I. and temperatures to 450°F. Equipped with Duo-Step Leverage and Venting, Clark-loy seats and discs. Pipe sizes from ½" to 2".

"Y" SELF-CLEANING STRAINERS. Remove dirt, scale and grit from steam, fluid and gas lines. Sizes ½" to 3" I.P.S.



SERIES "60" INVERTED BUCKET TRAP. Choice of horizontal or vertical inlet or outlet. For pressures up to 150 P.S.I. "Clark-loy" guided disc and seat.



THE HOME OF DUO-STEP LEVERAGE

Clark

MANUFACTURING COMPANY

1830 EAST 38th STREET

CLEVELAND 14, OHIO

Distributors and Representatives in all major cities

to other duties. Each card took from an hour to an hour and a half to convert. The grinders would have been paid for the time anyway. The people at Catherine didn't figure this labor as part of the conversion cost because the labor didn't cost them any money out of their budget.

Bigger Cans Increased Job Loads

The Catherine plant runs 60-gr. sliver, and it gets 15¼ lb. into the 14-in. cans as compared to 11 lb. in a 12-in. can. Card production is 13 lb. per hr. The job load was increased from 33 to 40 cards, and this increase eliminated one man per shift.

The increased diameter of the can makes the stack of sliver on top more stable by lowering the center of gravity, and this better stability eliminated a lot of white waste. The larger package also means fewer piece-ups in drawing, and drawing job loads were increased by 25%.

The Catherine plant has 161 cards running on the new setup.

Exploring the Community

(*Continued from page* 143)

But it proved to neighboring farmers that those factors, plus land and credit, eventually bring about a practical economy in agricultural areas.

Improved cattle strains, both bulls and heifers, from the Avondale herds are available for sale at very reasonable prices to the neighbors. Farmers who want the better bulls from Avondale's herds get truly good bargains; but in today's modern cattle farm scheme, with the use of artificial insemination, it is found less costly for the small farmer to secure services of the excellent bulls from sources such as Alabama Polytechnic Institute at Auburn.

Milk from Avondale herds is sold on the open market and delivered to customers on a basis competitive with other dairies. Cleanliness of the dairy, high butterfat standards of Avondale milk, and reasonable prices make it a highly desired source of supply from all angles. Avondale treats all customers alike, whether they are employed by the mill or just neighbors. Today the herds at Pell City, and Alexander City total close to 477 beef-type cattle, and there are about 235 head in the dairy herd at Sylacauga.

Avondale's interest in farming, forestry, and cattle has been to convince Alabamans that by living with the land instead of just living off the land, they can make depleted and

By simply opening a valve, you can put Heyden Formaldehyde to work in your process. Your pumps and pipe lines will deliver from your storage tanks a reliable raw material which will assure top quality in your finished product.

With Heyden Formaldehyde in your tanks, you have the advantage of these important features:

- **Highest purity.**
- **Constant uniformity and assay.**
- **Ease and economy of handling.**
- **Dependable source of supply.**
- **Availability as Formaldehyde Solution N.F. and 37% Methanol-free Formaldehyde.**
- **Shipment in tank cars, tank trucks, 475 lb. drums, 100 lb. carboys and 1, 5 and 9-lb. bottles.**

At the turn of a valve...

HEYDEN FORMALDEHYDE

PARAFORMALDEHYDE

HEXAMETHYLENETETRAMINE

FINE HEYDEN CHEMICALS

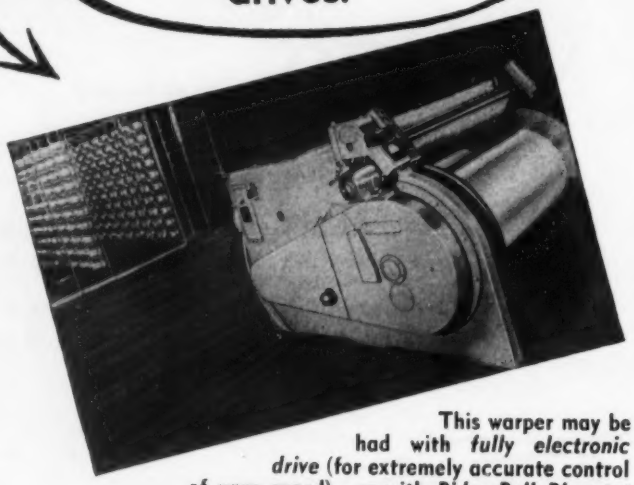
HEYDEN CHEMICAL CORPORATION

342 Madison Ave. • New York 17, N. Y.

CHICAGO • PHILADELPHIA • SAN FRANCISCO
DETROIT • PROVIDENCE

BENZALDEHYDE • BENZOATES • BENZYL CHLORIDE
BROMIDES • CHLORINATED AROMATICS • CREOSOTES
FORMALDEHYDE • FORMIC ACID • GLYCEROPHOSPHATES
GUAIACOLS • HEXAMETHYLENETETRAMINE
MEDICINAL COLLOIDS • METHYLENE DISALICYLIC ACID
NEOMYCIN • PARAFORMALDEHYDE
PARAHYDROXYBENZOATES • PENICILLIN
PENTAERYTHRITOLS • PROPYL GALLATE • RESORCINOL
SALICYLATES • SALICYLIC ACID • STREPTOMYCIN

High Speed
SIPP-EASTWOOD
WARPER Now
Available with choice of drives.



This warper may be had with *fully electronic drive* (for extremely accurate control of yarn speed)—or with *Rider Roll Rheostat type drive.*

The High-Speed Sipp-Eastwood Warper with its choice of drives, sturdy, extra-heavy construction, smooth application of power, spindle-driven beam, and dependable V-belt drive makes for more efficient operation. Its speed is only governed by the yarn.

OUTSTANDING FEATURES:

1. *Spindle driven beam builds up to 36" in diameter, 54¼" wide, or wider.*
2. *Electrically operated hydraulic brakes, automatically adjusted to beam load.*
3. *Variable finger-tip speed control, effective to as close as 1%.*
4. *Hydraulic beam doffing.*
5. *AC current only required.*

Ask for all the facts about this efficient warper.

IT'S A SIPP EASTWOOD

SIPP-EASTWOOD CORPORATION
47 Keen Street Paterson, New Jersey

DOMESTIC AGENTS:

S. FRED TOLL
2116 W. Morehead Street
Charlotte 1, N. C.

J. S. FALLOW & CO.
New Bedford,
Mass.

J. S. FALLOW & CO.
4846 Sherbrooke St. West
Montreal, Canada

nonproductive land profitable and fertile.

To those who have done the work it seems to have been a long, slow, and sometimes discouraging venture. But to someone like me, who sees in just a few years the once-barren stretches of eroded land turned into beautiful, green, fertile pasturage populated by sleek herds of cattle, it seems an almost miraculous undertaking. The transformation is to be found not only in the tangible green of the pasturelands but also in the attitude of thrift and well being of the people of the Avondale communities throughout the state of Alabama.

On a long-range basis, as all sound community relations programs are, this is one of the most progressive and enterprising projects we have found in the textile industry.

Homogenized Size

(*Continued from page 122*)

the fabrics; so Marion then went 100% on homogenized size for spun yarns.

Preparation Time Cut 35 Min.

It used to take about 101 min. to prepare a batch of size. The routine and time required for each task were:

Fill kettle	— 8	(min.)
Put in starch	— 10	
Stir	— 15	
Bring to temp.	— 30	
Hold at temp.	— 30	
Pump	— 8	
Now it takes only about 66 min:		
Fill kettle	— 8	(min.)
Put in starch	— 10	
Stir	— 15	
Bring to 200° F.	— 8	
Homogenize	— 25	

The size mix is started through the homogenizer as soon as the temperature reaches 200° F. A controller automatically shuts off the heat in the kettle at that time.

In the cooking kettle, the size is agitated at 43 rpm.; and in the storage kettle, the speed is 21 rpm.

Circulating System Is Used

Size boxes of the four nine-cylinder Cocker slashers are fed from a circulating system.

Taylor controls on the slashers take care of size level and the temperature of size and cylinders.

At 1,500 psi., only the first-stage valve of the Gaulin homogenizer has to be used. The back-stage valve is held as an alternate. But Marion has had no need for the alternate yet. The needle on the pressure gauge

Now...General Chemical

CRYSTAL HYPO

(Sodium Thiosulfate)

- ***Produced at 3 Convenient Locations***
- ***Available in 3 Preferred Grade Sizes***

To serve industry most effectively, General Chemical produces its Crystal Sodium Thiosulfate in three key locations—on the eastern seaboard, in the mid-west, and on the west coast—and maintains stocks at distributing stations in centers of commerce throughout the nation.

And to meet industry's varied requirements, General offers Crystal "Hypo" in three preferred grades—all photographic quality: Prismatic Rice (thru 4 on 14 mesh); Granular (thru 16 mesh); and Selected Universal (thru 18 mesh).

For those applications where an anhydrous material is preferred, General produces an outstanding Anhydrous "Hypo", having the same superior quality and uniformity for which its crystal product has long been known.

For your "Hypo" requirements—whether you use Crystal or Anhydrous—you can be sure of your source and sure of your supply when you "specify General Chemical".

Principal Uses

Photography

Chrome Tanning of Leathers

Assistant in dyeing and printing certain fabrics

Manufacture of dyes, organic chemicals, pharmaceuticals

Antichlor

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York • Philadelphia Pittsburgh • Providence • San Francisco • Seattle • St. Louis • Yakima (Wash.)
In Wisconsin: General Chemical Company, Inc., Milwaukee
In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

Allied Chemical

An H&D idea for you

Easy to pack, easy to handle, this Handi-Dispenser display box protects, identifies, merchandises, sells. Is your package part of your sales program? Send for "Creative Package Engineering." Hinde & Dauch, 5323-C Decatur St., Sandusky, Ohio.

our 65th year
H&D

HINDE & DAUCH
Authority on Packaging

17 MILLS AND FACTORIES • 40 SALES OFFICES

holds within half a point (50 psi.) during a normal run.

"Pump pressure," says Paul Stallings, "is important. We keep ours at the recommended 35 to 40 psi."

Maintenance Keeps Repairs Low

"We've never had a speck of trouble with any of the internal parts of our homogenizer," Mr. Stallings said.

Marion's maintenance program has a lot to do with that record.

The strainer is cleaned once a shift, and the homogenizing valve is cleaned once a month (based on three-shift operation).

Oil is changed every 9 mo. Condensate is drained out of the oil every Monday right after the start-up.

The homogenizing valve has to be ground about every 3 mo. Marion keeps a spare on hand.

The men who work with the size say that homogenized size cleans up much easier in the kettles, lines, and size box. Congealing in the size box is now about 35% of what it used to be, and shedding at the split rods is about 50% less.

Weaving efficiency on the looms Marion is running on homogenized-size warps is a little better with homogenized size. Shedding at the looms is a little less, but not 50% less.

Therman L. Richie, general superintendent at Marion, gives all the credit for the mill's success with the homogenizer to the people who worked with it. He says, "We've got a young group here—most of them came up through the mill. They're always on the lookout for cost-cutting methods that will keep our quality high. Resistance to technological change is no problem with us."

Pointers for Supervisors

(*Continued from page 141*)

This is certainly true, but distinction has to be made between the decision making in business operations and the formulation of policy. The one can't be done with committees. The other shouldn't be done without them.

Subordinates Should Be Consulted

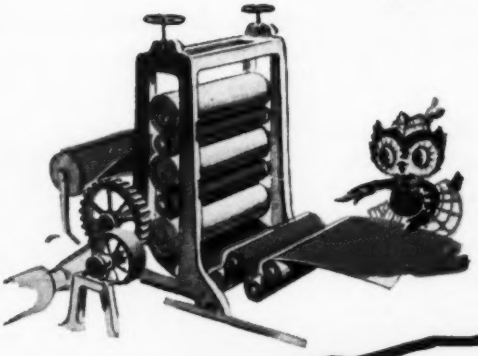
In other words, when a supervisor or an executive finds that a policy decision must be made, he should consult with his subordinates about establishing that policy.

The reasons should be obvious. Policies are broad rules of plant or company action within which each individual has to work and to make his own day-by-day decisions. If the

All these
AT NEW LOW COST...

Stabilization

Crush Resistance



Glazing and Embossing—

with RHONITE R-2

To give you the greater economy and improved efficiency of RHONITE R-2 we have not sacrificed these other familiar RHONITE advantages—(1) storage stability; (2) easy handling; (3) excellent durability.

P. S. *It's a good finish for nylons, too.*

RHONITE *is a trademark Reg. U.S. Pat. Off. and in principal foreign countries.*

CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

B. F. Goodrich Chemical Company

Textile Highlights

FOR MARCH

Water-soluble size for processing nylon and acrylic fibers

CONVENTIONAL sizes have not proved successful in the processing of nylon and acrylics and other of the new synthetic fibers. Good-rite TS-20, a new water-soluble size, is tailored especially for these new fibers and meets the most stringent requirements of single-end sizing and insures better control of slasher sizing.

Good-rite TS-20 provides a good degree of abrasion resistance and gives improved machine efficiency in both knitting and weaving operations. It is not recommended for *wet knitting* because of its acidic quality.

This water-soluble size protects the fibers during processing by providing a tough, flexible film that has excellent adhesive qualities. There is a minimum of flaking and sloughing off the fiber. Being water-soluble, it is easily removed during the scouring process.

TS-20 is a 25 per cent total solids solution and can be extended by adding cold water to make it ready for use. Write for technical bulletin.

In addition to this water-soluble size, B. F. Goodrich Chemical Company manufactures a series of other textile chemicals that cover a wide range of uses and provide better quality finished materials. A full discussion of these will be contained in a new textile bulletin to be available shortly. For full information, write Dept. TN-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

supervisor has helped in formulating the policy, he will understand it. Each of us is more apt to obey a law if he knows why the law was passed.

Using assistants to help make policies does not, of course, relieve some executive, whether it be the supervisor or president, from making a final policy decision. Nor is that decision made necessarily by a majority vote of those consulted. Nevertheless, when the executive finally announces the policy, all concerned will have had a hand in it and, whatever the decision, each person consulted will know he has had a chance to express himself.

Obviously the next step is to write the policy down. Often this step is skipped because words are difficult to use.

Only a year ago, with the aid of our managers, I had formulated a policy on pay for certain people who worked on Christmas Day. Apparently it was clear at the time, for all agreed. Only 12 months later, however, additional clarification was needed. Despite the difficulties, the writing must be done if subordinates are to know the policy and use it as a background for their decisions.

Follow the Established Policy

The second important matter about policies that each of us in management learns is to follow the policies that have been established. This must be done even if the policy has been established by one person.

Consider the reason for policies. They are to help each member of the management team make his day-by-day decisions more easily. If the supervisor ignores the policy, he is only making work for himself because each decision again becomes a major problem requiring study and thought instead of a question about which the study and thought have already been given when the policy was made. More important, however, is the confusion that can be caused when a policy is not followed. People like to feel they are being treated alike. Yet unless a policy is clearly followed, workers in one department will be given different treatment under the same circumstances than those in another department.

We have a policy that requires that an employee who has to be away for a day must notify his supervisor during his regular shift. Not too long ago we found that one supervisor had not bothered to follow that policy. He simply allowed his workers to report or not as they saw fit. Imagine the difficulty of enforcing a policy when one supervisor ignores it.

We have another policy against

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. MARCH, 1953

Avisco Chemicals Give Textile Mills Solutions To Static Problems

Major static problems in textile processing—particularly in dyed fibers, yarns and fabrics—are being met with the help of Avisco textile chemicals. They are easily applied in the final rinse after dyeing, eliminating later handling operations.

Besides controlling static, Avisco textile chemicals provide excellent fiber lubrication and cohesion in carding, gilling, drafting and combing.

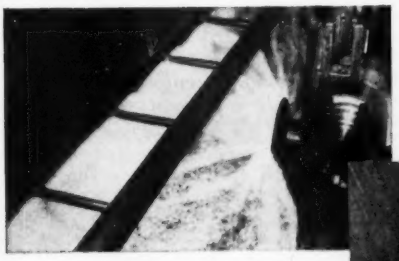
They are non-ionic, and completely dispersible in water. They are highly stable to acids, salts, and mild alkalies, as well as compatible with dye liquors, sizes, and resins used in finishing. In addition, Avisco treating agents are permanently stable in storage, do not volatilize during drying, and do not affect shades or light and wash fastness.

Other Avisco textile chemicals also in demand for their outstanding qualities are a rayon stabilizer, a permanent rayon finish, and a non-ionic synthetic detergent.

Representatives of Avisco's Textile Research Department are working closely with mills to apply static-control chemicals, as well as chemicals developed for other textile problems. They will be glad to assist you. Write us about your specific needs.

Left, drafting untreated synthetic fibers.

Right, same fibers treated with Avisco Chemicals. There is practically no fly. Down time is reduced, uniformity of later processing assured.



Left, untreated fiber going through worsted card.

Right, the same operation after treatment with Avisco textile chemicals. Exceptionally effective static control is achieved.

Avisco Textile Chemicals were developed in conjunction with and are manufactured by Atlas Powder Company, Wilmington, Delaware.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

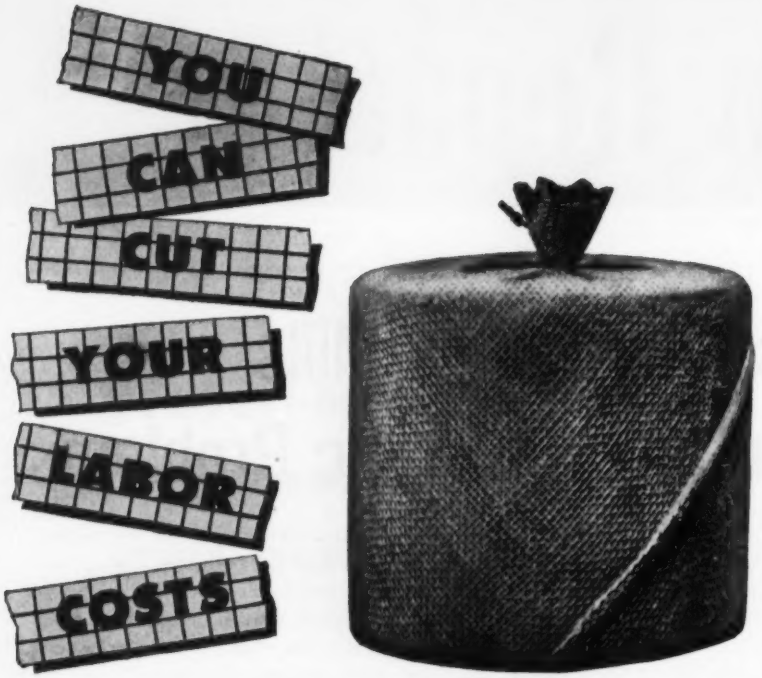
1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers
RAYON ACETATE VINYON* FILATEX®

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

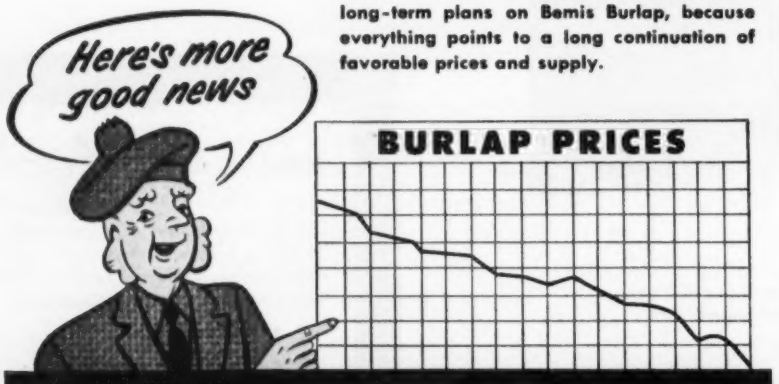


Use Bemis Tite-Fit Tubing!

Bemis Tite-Fit Tubing . . . the spiral-sewn burlap tubing with the 2-way stretch . . . is the fastest, easiest, most economical wrapping for rolls or bales of goods. Ask the Bemis Man to demonstrate.

Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.



Bemis

BEMIS BRO. BAG COMPANY

General Offices
St. Louis 2, Mo.

discrimination against a person because of union membership. This happens, of course, to be the law as well as our policy. But one supervisor continued to "needle" dues-paying members whenever he would hand out the pay checks showing the checked-off dues. We might well have had trouble with the union and with the government over that man's unwillingness to follow company policy.

Each supervisor can multiply these examples many times. There always seems to be the individual in the organization who won't follow policies. In the words of a World War I song, "They're all out of step but Jim." And the supervisor who won't get in step will soon cause trouble throughout the plant.

Supporting Policies

The third lesson about policies for each member of management to learn is the proper time and place to discuss and to criticize them. Only more serious as a trouble maker than the supervisor who passively resists a policy by not following it is the one who talks against that policy at the wrong time and to the wrong people.

Can you imagine what would happen to a football team if the center, after the signals had been called, said to the center of the other team, "That quarterback signaled a pass this time. I'll go through with it, but I think it's a terrible decision."

It would be bad after the signals had been called for the center to say that even to another member of his own team. The futility of such action on the field is apparent. Nevertheless, many of us in management keep on doing just as bad in our day to day contacts with subordinates.

Suppose the vice president in charge of labor relations does not personally approve of unions even though the company has an established policy of noninterference. Suppose he talks freely about his beliefs to managers, superintendents, and foremen. Can you imagine the confusion that will follow?

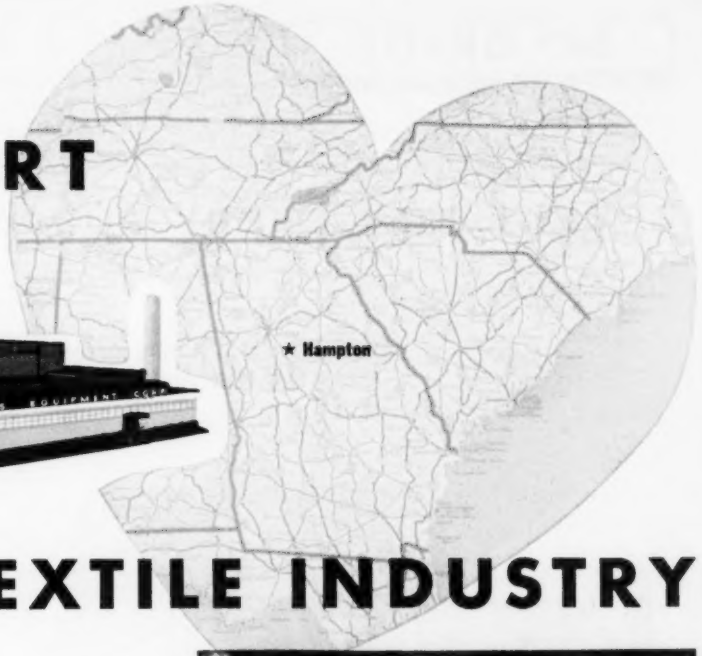
Suppose the company has a policy of requiring workers to send word if they are going to be out. Suppose a supervisor doesn't like this policy and tells his assistants and his employees about it. Plantwide confusion will surely follow.

Don't Argue With the Quarterback

Again each supervisor can think of many examples of management people arguing with the quarterback's decision after the signals have been called. Perhaps each one of us has been guilty

For more information, write direct or use Reader Service post card.

in the HEART

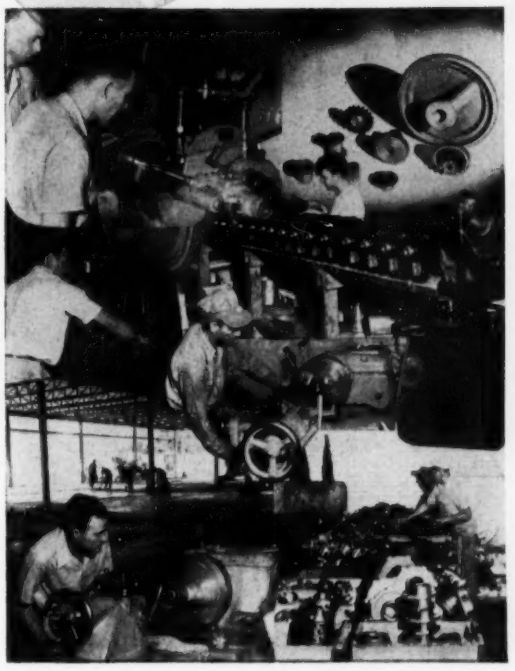


of the TEXTILE INDUSTRY

To meet the ever increasing demands for Southern States replacement parts and textile specialties, a substantial expansion of manufacturing facilities has been completed. Located in the heart of the rapidly expanding textile industry, Southern States offers complete engineering and fabrication service on replacement parts. These new facilities make it possible for a large number of the more rapidly wearing parts for preparatory equipment to be shipped from stock.

Working closely with textile manufacturers, Southern States engineers have developed such money saving devices as the Type C-1 Ball Bearing Comb Box, Off End Stand, the new SS Individual Card Drive and Coiler Conversion Units for cards and drawing frames.

An integral part of the textile industry for more than 40 years, Southern States is now equipped to serve you better than ever.



Southern States SS **Equipment Corp.**

HAMPTON GEORGIA

Representatives - Mechanical Division

William A. Knapp Atlanta, Georgia	Matthews Equipment Co. Providence, R. I.	John C. Walters Hampton, Georgia	C. H. Kennington Charlotte, N. C.	Frank Birchfield Alex. City, Ala.	Textile Parts & Machine Co. Gastonia, N. C.	F. C. Todd, Inc. Gastonia, N. C.

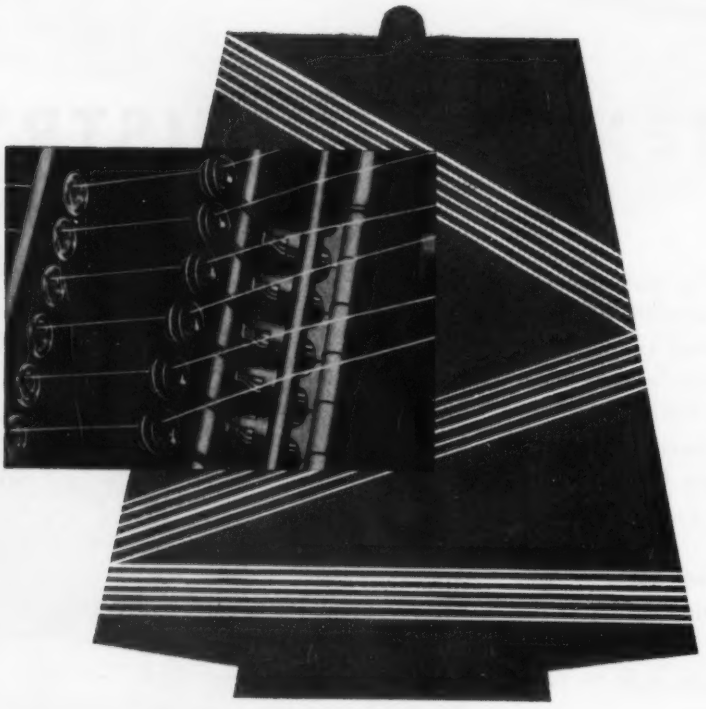
Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

 For more information, write direct or use Reader Service post card.

Mc BRIDE

CREELS FOR EVERY PURPOSE

WARP BEAMS
FLANGES
ROLLS



New electro-magnetic stop motion features sealed mercury switches—gives positive action for all yarns and warping speeds. Write today for descriptive folder giving full information.

Mc BRIDE

EDWARD J. McBRIDE COMPANY, INC.
1410 ADAMS AVENUE, PHILADELPHIA 24, PENNSYLVANIA

of this mistake at one time or another, but we can surely recall the time the other fellow did it. Whoever is guilty, the management team loses when an announced policy is criticized openly to subordinates by a member of that team.

The policy may be wrong. If so, there are ways of correcting it by talking to the captain, or at least to the next ranking officer. While the rule is in force, however, a good member of the team will follow it and criticize it only to his superior or to another supervisor of equal position to his.

To Summarize

Policies are for the aid of each member of the management group. They enable him to make decisions within a framework of general statements. These policies should be developed after consultation with others and then should be written down. Whether or not the policies are correctly developed, however, the supervisor who is loyal to his company will follow the policy. What is even more important, he will not criticize that policy to subordinates. He will, of course, feel free to discuss changes with the proper officials of his company, for only in that way can progress be made. Refusal to follow a policy or untimely criticism of a policy can only lead to management chaos.

Heat-Waste Survey

(*Continued from page* 113)

tures during processing. Too-high temperatures waste fuel because of unnecessary heat input; too low temperatures lengthen the process and increase running heat losses from exposed plant surfaces during idle periods.

Reorganize for Steam Economy

When you reorganize the layout of a finishing plant or design homemade equipment, call in a control expert. There are some horrible specimens of homemade hot-air dryers in operation with over- or under-dimensioned heating surfaces and fans wrongly placed and undersized air-outlet openings, and the like. These dryers are scarcely controllable. They waste steam and fuel all year and are often only kept in operation because they are homemade. Applying control instruments to such dryers would be wasted money because their controllability is usually very poor.

A source of steam waste in finishing is liquid boiling in open-topped ves-

CALCO dyelines

Advertisement No. 30 of a series

PREPARED BY AMERICAN CYANAMID COMPANY / CALCO CHEMICAL DIVISION
DYESTUFF DEPARTMENT, Bound Brook, New Jersey
New York • Chicago • Boston • Philadelphia • Charlotte • Providence

Calco

YOUR FAVORITE COLOR?

We suspect that most dyers have their "favorite color" and that Calcocid* Alizarine Blue SAPG would be a leading contender for popular choice among wool dyers. Certainly, no blue is better known to the wool trade and, judging from reports of

the outstanding performance of the bright shade of Calcocid Alizarine Blue SAPG, it has the complete endorsement of the industry for most uses. While no one has yet found the perfect dye for all uses, we do know why Calcocid Alizarine Blue SAPG is a popular choice with many dyers:

1. It is the most level-dyeing of all common alizarine blues; it works well in combinations to produce excellent levelness in pastel shades, and as a base in medium to dark shades.

2. It can be used for the dyeing of woolen fabrics containing viscose or cotton effect threads, leaving these fibers white when it is applied from an acid bath.

3. Calcocid Alizarine Blue SAPG has good solubility; it can be used in machines having very short liquor ratios, with excellent levelness and penetration.

4. Wool dyers find it most economical, since it can be applied to wool in various stages of manufacture, from raw stock to pieces.

5. It exhausts well, and produces clear greenish blues on wool when applied by conventional methods.

6. Its shade is among the brightest and greenest of the Alizarine Blue SAPG types available for woolens and worsteds, knitting yarns, carpets, upholstery fabrics, and other textiles where light fastness is essential. *Trade-mark

Controlled Vat Dyeing

The precision required by contemporary vat dyeing processes, the application of vat dyes to an ever-increasing range of natural and man-made fibers, the necessity for maintaining the lowest possible dyeing cost, and the insistence of the textile trade on perfect uniformity of shade have necessitated rule-of-thumb procedures be replaced by others which are theoretically sound and instrumentally controlled. Calco Technical Bulletin No. 828 discusses some of Calco's investigations in this field and lists leuco potentials of Calcoloid* and Calcosol* dyes. Continuing theoretical studies and cooperative projects with the dyeing industry are steadily advancing the use of instrumental control in practical vat dyeing.

*Trade-mark

Dyes That Made News in '52

We submit a brief summary of the uses and description of new dyes introduced by Calco during 1952.

CALCOGENE* BLACK 5GCF SOLUTION and CALCOGENE BLACK RBCF SOLUTION

These are solutions of sulfur dyes, also available in powder form. Some dyers prefer a dye in solution rather than a powder because it can be measured directly from dye drums next to the machine. Since dye baths of high concentration can be prepared with these liquid sulfur blacks, they are particularly suitable for application by padding processes. They exhibit maximum fastness to crocking and washing, even in the brief fixation time of continuous processes.

CALCOFLUOR* YELLOW HEB

This patented acetate dye is a brilliant green-shade yellow for acetate, nylon and the new synthetic fibers. In addition to producing bright yellows, it is also used in combinations to give chartreuse, green, orange and scarlet shades of exceptional brilliance.

Calcofluor Yellow HEB has comparatively good wash fastness and its light fastness, while moderate, is commensurate with many of the other dyes which are used with it to produce a range of extremely bright shades.

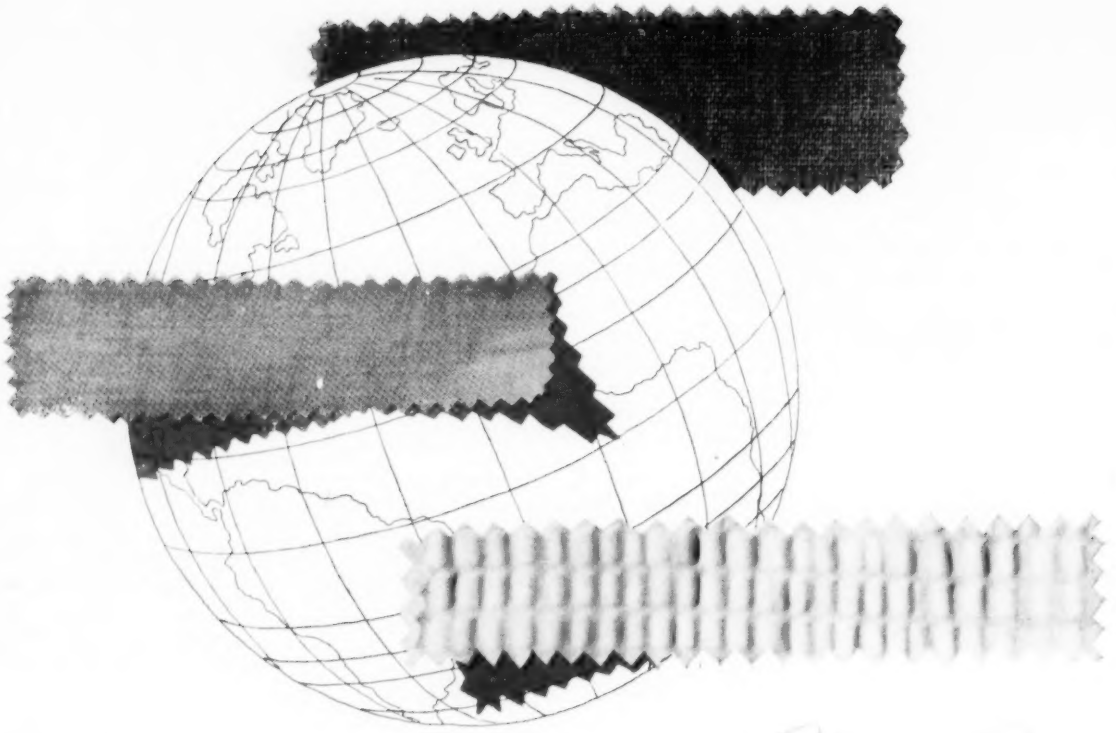
*Trade-mark

For the Textile Bookshelf

Application of Dyes to New Synthetic Fibers (*Calco Technical Bulletin No. 826*). A carefully compiled record of existing data on the new synthetic fibers. Dyeing methods for the coloring of the new synthetic fibers and fastness properties to look for are covered in this study.

Controlled Vat Dyeing (*Calco Technical Bulletin No. 828*). A complete review of Calco research studies of the stabilization of vat dyes at elevated temperatures. Chemical and instrumental methods developed and used in their study and the new term "Leuco Potential" are presented and explained.

6,211,638 man hours with no lost time accidents.



THE BRIGHT NEW WORLD OF FABRICS NEEDS *Clean Air*

When the fashion world moved from dark to light . . . when dreary colors gave way to a brilliant panorama of pastel shades . . . and when the age-old fabrics were being augmented and supplemented by new synthetics . . . many complex problems faced the textile manufacturer.

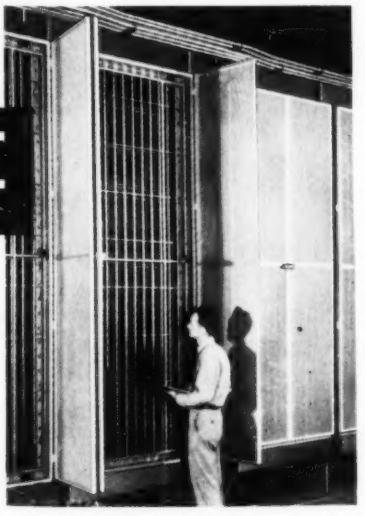
One of these was the possibility of discoloration from dust and smoke in the air.

Super clean air was needed. And because *Industry Expects The Best From AAF*— America's leading textile manufacturers looked to AAF for the air cleaning equipment to handle the job . . . thoroughly and economically! And because AAF makes *the only complete* line of air cleaning equipment in the world today . . . we had the answers.

Perhaps you have an air cleaning problem. If you have, it is highly probable AAF experience can help you. A phone call, letter or telegram will bring you complete information without obligation.

Expect the Best from... AAF

American Air Filter
COMPANY, INC.
304 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.



Final inspection of an ELECTRO-MATIC precipitator that will soon be supplying super clean air for a large southern textile mill. Air-borne dust and dirt . . . even smoke . . . is eliminated by this exclusive self-cleaning AAF precipitator.

sels. Water or other process liquids boil at approximately 212° F. and cannot be controlled. Dyeing with high steam pressures in open equipment is wasteful because steam bubbles pass through the bath uncondensed and produce the foggy atmosphere typical of some dyehouses. Pressure reduction of process steam is highly desirable, and not only for controllability: low-pressure steam in boiling, dyeing, scouring, and bleaching reduces formation of fog.

With "submerged" boiling, open-vat dyeing is controllable; for example, set a dye-vat thermostat at 211° F., 1° below full boil. For agitation of the dye liquor, steam should be replaced by compressed air, mechanical stirrers, or circulation pumps, because steam bubbles waste heat. In general, the temperature of large volumes of hot liquid are more easily controlled than smaller ones; so larger process vessels are preferable for heat economy. For example, an instantaneous tub-and-shell heater is less controllable than a large hot-water storage calorifier with proper steam coils and good insulation.

Instruments Insure Quality

Instruments for conserving heat and fuel in the drying processes are mainly limited to measurement and control of the following factors: temperature, humidity, time, and speed. A hot-air dryer or a constant dryer can give satisfactory quality and output but can still waste heat and fuel whether it uses steam, hot water, gas, or electricity.

Management should not be satisfied with a dryer unless the drying is done with minimum heat and power. Uneven drying, low output, big consumption of steam, and difficult adaptability of the drying rate are sure indications that something is wrong. If the cost of replacing an old dryer with a modern dryer is too high, the only alternative is to improve the old dryer.

Any dryer survey, whether carried out by plant engineers or under the guidance of an expert, has to establish the following facts:

1. Is the present dryer satisfactory for the job? If not, what can be done in the way of reconstruction?

2. Is the dryer operated correctly? If not, what measures should be taken to improve output, uniformity, quality, adaptability, moisture control, and thermal efficiency?

These points are listed in the sequence of their importance in relation to production. Fuel saving comes last, but this factor cannot be entirely neglected.

With hot-air dryers of the batch type, one of the main causes of waste is radiation from noninsulated or badly insulated housing. A contact ther-

CONTROL HUMIDITY, ROOM TEMPERATURES

at WAUMBEC MILLS, Manchester, N.H.

Executives of the Waumbec Mills, Inc., Manchester, N. H. find their Stanley Magic Door Controls pay for themselves in two important ways.

Stanley Magic Door Controls act to seal in humidified air, keep room temperatures at desired levels. Doors open on approach, stay open until passage is clear, then close automatically.

They increase operating efficiency, lower operating costs. Use these check-points to benefit from Waumbec Mills' experience:

- **Maintenance.** Don't "bang" doors open. It costs plenty in repair bills, high replacement costs.
- **Time and Effort.** It takes man-hours to pull and tug at heavy plant doors. Magic Door Controls move traffic without wasted motion.
- **Labor Relations.** Cement and improve good employee relations with Magic Door Controls. Magic Door users find they step-up production, cut absenteeism. Whether your present doors swing, fold or slide, Stanley Magic Door Controls will expedite work flow in your mill.

Regular Stanley Magic Door operator with pull cord control, handling two-way traffic through an "in" and "out" door, using existing air supply and existing door can be purchased for as little as $347.25 for openings up to 60" and $367.50 for openings up to 84". Send for full information today.

Representatives in Principal Cities

THE STANLEY WORKS, Magic Door Division
3133 Lake St., New Britain, Conn.

☐ Please send full information on Stanley Magic Door Controls.

☐ Call when in area.

Company Name _____

My Name _____

Address _____

City _____ Zone _____ State _____

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

For more information, write direct or use Reader Service post card.

The Precision Bobbin Built For the Spindle

A precision built EPI bobbin will help in producing high quality yarn. It pays dividends by less spindle and machine wear and lower power consumption . . . it is built with this in mind.

The EPI bobbin, designed for twisting synthetic yarns, is constructed to fit the spindle . . . no guesswork. It is built and assembled from the spindle bearing outwards with every part machined concentric to the spindle.

It's a strong bobbin. The patented* expanding lock ring assembly with the aluminum core shown on the diagram enables this bobbin to withstand the tremendous pressure of nylon and other tenacious yarns even under steaming conditions.

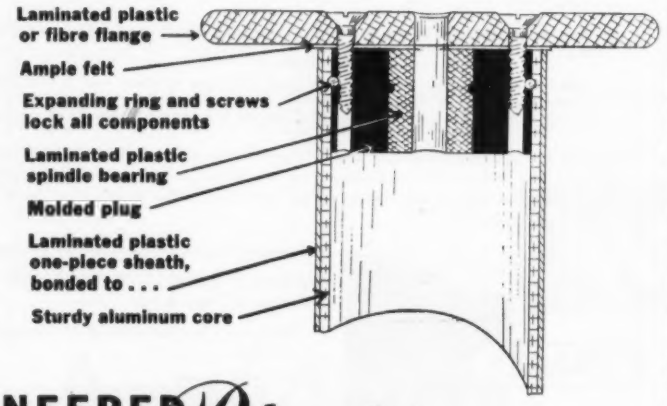
The laminated plastic provides a smooth hard yarn surface.

Every EPI bobbin is dynamically balanced to close tolerances to compensate for material variations. At high speeds even minute variations soon show up to cause spindle wear and poor quality yarn. Experience shows EPI dynamic balance pays quick dividends.

The thousands of EPI bobbins in service for five years have proved that their special features pay off in quality yarns, lower maintenance costs and power consumption.

It will pay you to write, wire, or call for full details on the EPI precision bobbin.

*U. S. Patent 2,625,343


Laminated plastic or fibre flange
Ample felt
Expanding ring and screws lock all components
Laminated plastic spindle bearing
Molded plug
Laminated plastic one-piece sheath, bonded to . . .
Sturdy aluminum core

ENGINEERED *Plastics*

INCORPORATED

Gibsonville, North Carolina

mometer will indicate surface temperatures of the outer walls and the ceiling of a dryer compartment. Insulation will cut down radiation losses.

Leaking steam traps can be detected by putting sight glasses after each trap. Excess air temperatures can be avoided by checking the exhaust-air temperature. Old glass thermometers hidden in the exhaust-air duct should be replaced with eye-level dial thermometers with alarm contacts. The alarm bell or light will warn that drying quality is endangered and fuel is being wasted.

Recording thermometers for exhaust air are recommended, especially for larger continuous hot-air dryers.

Multipen thermometers record up to six hot-air temperatures on the same roll chart: for example, air-inlet, four-zones, and exhaust air. Any irregularity within the dryer appears on the chart records.

Control the Load and Humidity

Uniform loading is of overriding importance for batch and continuous drying. Unfortunately, this factor cannot be measured with instruments but depends on the operator.

However, the time factor can and should be measured. A larger clock might insure the required drying time for a batch, especially with a preset alarm. It is possible to control drying times and idle periods with event recorders. Too many stops waste heat, especially if the steam valve is open during the idle periods. A chart record will reveal idle times. Reducing idle periods means reducing heat-radiation losses. Steam consumption during idle time could be almost the same as during running time.

Thermostatic control of steam-heated cylinders is possible with a pneumatic indicator-controller. This instrument is actuated from the condensate temperature. But the correct steam trap must be used. Other methods use contact thermocouples or electrical resistance thermometers gliding on the cylinder surface. Instruments will ultimately make use of radiation heat without mechanical contact.

The measurement of humidity in drying can be done by measuring moisture content of the goods or by measuring relative humidity of the air.

Exhaust air should leave the dryer at minimum temperature and maximum relative humidity. This target requires measurement of exhaust temperature and humidity. Suitable indicating or recording exhaust-air thermometers are available in a variety of designs and prices. Humidity recorders are at the present time limited to a few more or less elaborate designs,

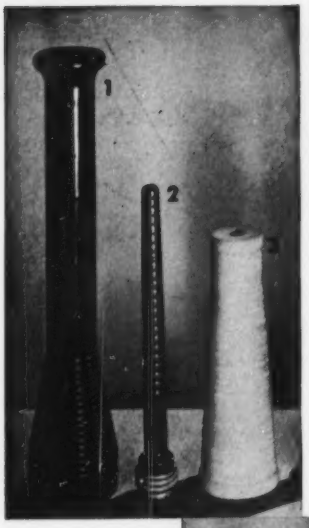
TEXTILE BANKING COMPANY

Inc.

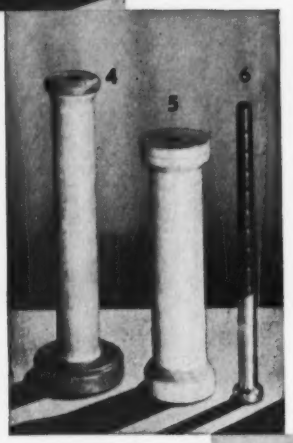
Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

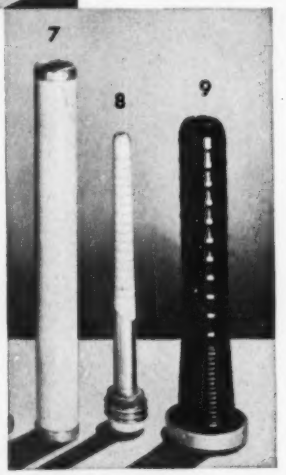


LOWELL
Bobbins, Cones Rolls & Tubes



1 Ring spinning bobbin
2 Automatic loom bobbin
3 Winder cone
4 Worsted twister bobbin
5 Winder tube
6 Bobbin for non-automatic loom with electric feeler motion
7 Warp spinning tube
8 Automatic loom bobbin for electric feeler motion
9 Worsted spinning bobbin

Lowell bobbins, cones, rolls and tubes are made from maple, birch or beech wood, as required. All wood is thoroughly seasoned, air dried and properly cured in a modern dry kiln. Bobbins are finished with oil, lacquer, shellac or enamel (baked on) as specified. Inspection is rigid and only perfect products are passed for shipment.



MAY WE QUOTE ON YOUR REQUIREMENTS?

LOWELL SHUTTLE COMPANY
Established 1896 • Incorporated 1914
15 TANNER ST. LOWELL, MASS., U. S. A.
SALES REPRESENTATIVES
Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga., West Philadelphia Supply Co., Emerald and Somerset Sts., Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

and they are not cheap enough to find universal use on textile dryers. The textile industry would welcome a moderately priced wet- and dry-bulb instrument for measuring exhaust air temperature and humidity. However, the available humidity recorders lend themselves to modern large-zoned hot-air dryers.

Finally, speed is a factor that can be easily measured with little cost. The operator should see the speed at a glance. Mechanical and electrical tachometers are available for this purpose.

Air Dampers Need Regulation

Recirculating air is one of the best means of saving heat and fuel in drying. It is advisable to install a recirculation system or increase the air velocity if the dryer has an old system. Mixing part of the exhaust air with fresh air serves two purposes: less fresh air has to be heated, and the rate of drying can be varied by the rate of mix. The correct position of the air-mixing dampers should be determined by humidity and temperature measurement. It will pay to have some means for showing the correct damper positions. Operators of hot-air dryers should know the purpose of air dampers. An exhaust-air thermometer with a large dial and bold figures should be mounted in front of the operator. Show him how to keep exhaust temperature low by adjusting the air dampers.

Each drying machine should have a thorough check-up at least once a year. If this inspection is inconvenient for the regular maintenance staff, the maker of the dryer or a consultant should make the necessary measurements. A heating contractor might be willing to lend the required thermometers and hygrometer. This inspection will reveal the degree of efficiency and might indicate possible improvements. It will show the need for cleaning heating surfaces, overhauling fans and fan motors, and lubricating or repairing parts.

Jersey Tricot Ratios

(*Continued from page 101*)

of the stitch is indicated by the horizontal lines of dots, which represent courses, getting closer together at the upper end of the scale. As the fabric becomes tighter, the length of the 1-0, 1-2 laps changes more radically than the length of the 1-0, 2-3 lap. The change is due to the different angles of the threads and results in a larger ratio.

How To Use the Chart

A suitable runner length can be de-

Always Uniform

There is often no open-and-shut answer to slashing problems. But one thing is basic . . . only unvarying quality such as you get in Victor Mill Starch can insure smooth performance day after day.

That's why Victor is known as "The Weaver's Friend" throughout the industry.

For better penetration, stronger warps, less shedding . . . rely on Victor Mill and the conscientious help of the Keever man who serves you.

TEXTILE SALES DIVISION
1200 WOODSIDE BUILDING
GREENVILLE, SOUTH CAROLINA
Charles C. Switzer, Manager

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO
Corn, wheat and other grain products for industry since 1898

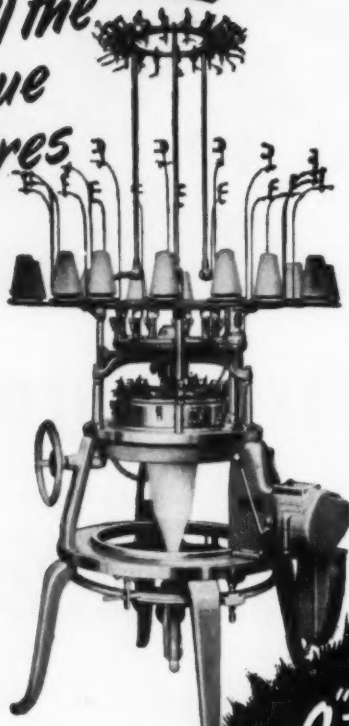
The New

Mellor MBI Bromley

INTERLOCK

Multifeeder and stripe or check pattern machines

with all the unique features



9"-30" DIAMETERS

20-24 CUTS

★

Send for full details, to the builders of more than 7000 Interlock machines operating successfully in almost every country in the world.

MELLOR BROMLEY & CO. LTD

LEICESTER · ENGLAND

termined for various qualities where 55-den. yarn is run. The graph shows that a 6-in. quality (80 courses per in.) gives a runner length of 45 in. on the back bar and 60 in. on the front bar. The ratio for this quality is 4 to 3. A higher yield, with 40 courses per in., gives a ratio of 72 to 56 or 9 to 7.

Charts for yarns other than 55 den. can be drawn by plotting the runner lengths on a chart while the stitch is progressively tightened.

Removing Caked Size

(*Continued from page 123*)

brush at an angle of approximately 45°. The bars are then moved back and forth across the face of the brush until the dirt is removed.

When the total accumulation of dirt cannot be removed in this manner, a small amount of jeweler's rouge is placed on the brush, and brushing of the hooks is continued. The solvent is used again to insure complete removal of the rouge.

This procedure is done about once a week when the mill is operating at top capacity. In slower periods, when the machines run only about 40 hr. per week, this type of cleaning is done once a month.

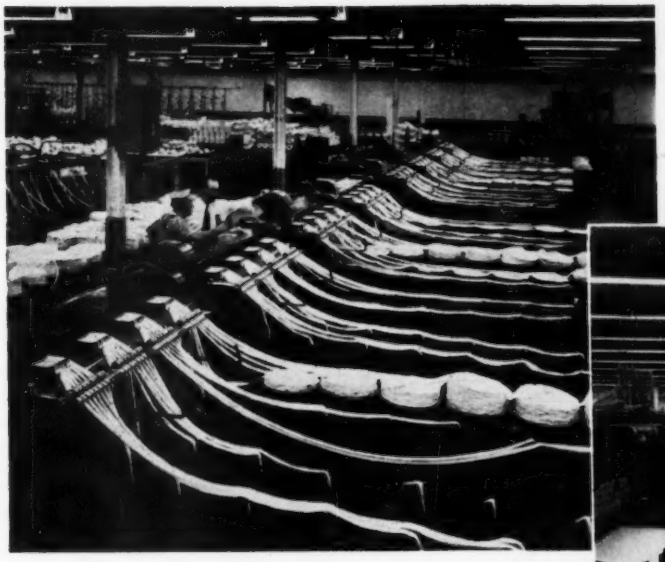
After cleaning, a coating of high-grade twister-ring lubricant is applied to the welt hooks and sleeves to protect them against corrosion and to keep dirt particles from between the sleeves.

6. Remove Rust Spots

Small rust spots are removed from the steel parts by the use of either a special metal cleaner or an ammonia solution consisting of 50% aqua ammonia (technical grade, 27 to 29%) and 50% water. The ammonia solution is efficient for use in cleaning the entire machine, including cams, shafts, and other parts that accumulate an unusual amount of dirt, grease, and other foreign matter during the year. When this solution is used, all parts cleaned are rubbed vigorously and wiped thoroughly. Immediately thereafter, a thin film of oil is applied to protect the parts.

When an ammonia solution is used for cleaning sinker heads and other brass parts, care should be taken to see that the solution does not run into the heads. A good cleaning procedure is to dip a cleaning rag into the solution, wring it out almost dry, rub the parts vigorously, and apply a light film of needle oil or other protective oil.

Any solution containing ammonia attacks brass or bronze if it is allowed



At first glance...

. . . you don't see much Bahnson Equipment in these photographs—but it's there.

Even if you visited this new plant, you might not notice the air conditioning system immediately—but it's there.

And it's there for a purpose — to provide Lyons Synthetics Division of Orr Mills with 283,400 cubic feet of clean, fresh air at the precise temperature and humidity needed. That's a complete change of air every few minutes; and the controlled atmosphere keeps the machines running perfectly . . . keeps fibers properly conditioned . . . keeps workers at peak efficiency.

So even if you don't see the gleaming ductwork and efficient Bahnson distribution grilles at first glance, you see and feel the **results** the moment you enter the rooms.

Hidden away overhead are the eight Bahnson Centrispray Washers that breathe life to those ducts . . . and hidden away in the office is an operating expense record that will soon show cost figures to prove, beyond all doubt, that this plant produces more cloth, and higher quality cloth, at lower unit cost.

Personnel records will show less lost time—while other records will show better machine operation, less maintenance, less down time.

We are proud to have been chosen to supply the air conditioning system at Orr Mills. We think it was a good choice because the Centrispray Air Washers, fans, controls, dampers, grilles, and most other components were designed and fabricated by Bahnson. The Bahnson Company can provide a completely integrated system because we have the experience and the engineers necessary . . . the machines and the men to operate them. In short, this system was built by textile air conditioning experts.

To learn more about Bahnson Textile Air Conditioning Systems, ask to have an engineer call, or write for a copy of our latest Catalog, 22A.

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

Another wooden DYE HOUSE ROOF that won't rot or decay

Hellwig Dyeing Corporation of Philadelphia had long been bothered with rot and decay in their dye house roof. Because of the presence of condensate and steam, the roof had been a constant source of maintenance expense.

In 1943, they incorporated "Wolmanized"* pressure-treated lumber into the roof structure of the dye house. According to Mr. Otto W. Peyer of Hellwig Dyeing Corporation, "THIS TYPE OF ROOFING IS THE ANSWER TO DYE HOUSE CONSTRUCTION. TREATMENT PREVENTS FUNGUS GROWTH".

The insulating qualities of wood make wood a desirable building material in the construction of roof decks, floors, and structural members of dye houses and bleacheries. "Wolmanized" pressure-treatment makes this wood last longer.

"Wolmanized" lumber can solve many of your maintenance problems which are brought about by the continual presence of moisture in dyeing and finishing plants. Ask your architect or plant engineer about "Wolmanized" pressure-treated lumber . . . or write for complete information and the folder, "Wood Preservation".

American Lumber & Treating Company

General Offices: 1601 McCormick Bldg. • Chicago 4, Illinois

Offices: Little Rock, Ark. • Portland, Ore. • Boston • Los Angeles
San Francisco • Baltimore • New York • Jacksonville, Fla.

Wolmanized PRESSURE TREATED **Lumber**

*Reg. U. S. Pat. Off.

to remain on the parts for any length of time.

Rust spots that remain after the use of the ammonia solution are removed with a Grade 000 emery cloth. This cloth is very fine and will cause no damage to the parts if too much force is not used. The particles of metal removed by the emery cloth and emery dust must not be allowed to fall into the machine where they will cause abrasive action when the machine is in operation.

The method outlined above can of course be modified to conform to the ideas and general methods of management at each mill. It is, however, important that proper precautions be taken to insure a regular plan of cleanliness for all parts of the machine. Such a plan will pay off in satisfactory and efficient operation over a long period of time.

Transfer Filling Breaks

(*Continued from page 109*)

1. Place the filling in the battery correctly. The ends must be free of the bobbin tips and must be supported in the correct groove of the thread guide. Remove excessive waste from the thread-guide knob, and wind the ends around the knob a sufficient number of turns to hold the filling firm.

2. Flag the loom for the loomfixer when springs are so weak that the bobbins turn in the battery and permit the bobbin tip to trap the filling.

Magazine hands should:

1. Place bobbins in the magazine straight. On the vacuum-control system, leave filling tails long enough to be held firmly in the cylinder. If rotors are used for filling-end holders, keep the loose tails pulled out and place the filling ends securely in the rotors.

2. Don't let the magazine cells run empty of bobbins. When the magazine transfers on an empty cell, magazine settings are usually disturbed.

When fine numbers of staple-rayon or filament-rayon filling are run, antisloughing devices on the battery or magazine are necessary to prevent turning of bobbins and tangling of filling from vibration of the loom.

If looms are checked frequently, filling breaks on the transfer can be all but eliminated. It takes less loomfixers' time to check looms for breaks on the transfer than it takes for weavers to start up looms that are normally stopped for the breaks.

The results of loomfixers' work are fewer set marks in the cloth, more weavers' time spent in inspecting cloth, and increased cloth production.

Is compact design your problem?

here's how portable electric tool manufacturers solve it with **NEEDLE BEARINGS**

Torrington Needle Bearings are designed into many portable electric tools because their small cross section permits the close shaft-center distances so necessary to compactness.

They have been *performance-proved* through years of successful operation on counter shafts, pinion shafts and spindles in drills, buffers, sanders, grinders and other electric tools.

Since it was introduced nearly twenty years ago, many manufacturers throughout industry have made the Torrington Needle Bearing "standard equipment" for products requiring an anti-friction bearing that's light, compact and has high rated radial capacity.

Why not find out how Torrington Needle Bearings can be used to advantage in your products?

THE TORRINGTON COMPANY, Torrington, Conn., South Bend 21, Ind.

TORRINGTON NEEDLE BEARINGS

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

Trade-marks of some of the portable tool companies whose products enjoy the benefits of Needle Bearings.

SKIL PORTABLE TOOLS · STANLEY · MILLERS FALLS TOOLS · SIOUX · PET POWER TOOLS · Speedmatic · Thor · Milwaukee · Black & Decker · Mall

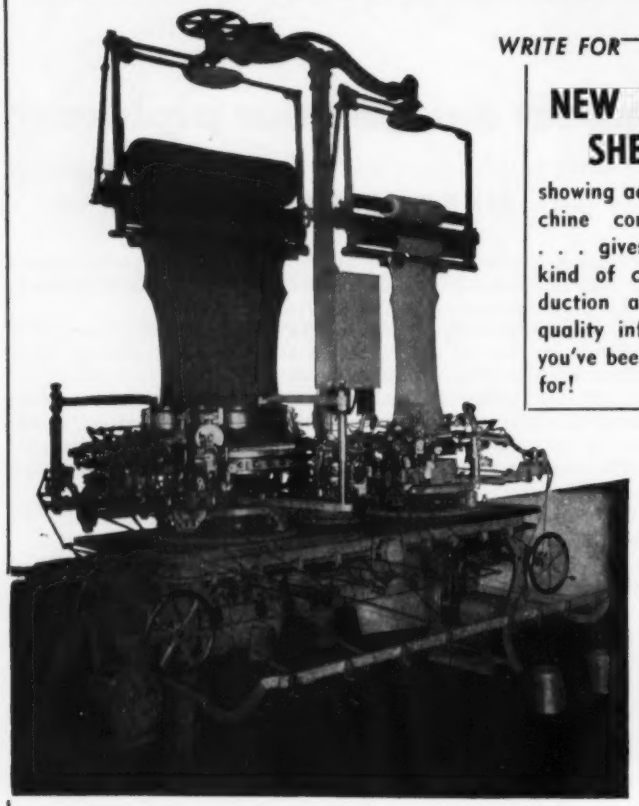
ONE OPERATOR

running Tompkins D-2 Double Head Spring Needle Knitting Machines

WILL TURN OUT TWICE AS MUCH FABRIC

as one operator running Multiple Feed Latch Needle machines with same number of bobbins, plus

PERFECT CLOTH all the way!



fully modern!
TOMPKINS D-2 DOUBLE HEAD SPRING NEEDLE KNITTING MACHINE

WRITE FOR

NEW DATA SHEET

showing actual machine comparisons . . . gives you the kind of cost, production and cloth quality information you've been looking for!

YOU CAN TAKE YOUR CHOICE of lower cost per yard (with less operators) or doubled production with perfect cloth all the way . . . with a maximum versatility of fabrics!

WRITE OR PHONE FOR YOUR COPY of the NEW DATA SHEET which covers such important subjects as Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings!

SEE THE TOMPKINS D-2 IN PRODUCTION ON WHATEVER YARN OR FABRIC YOU WISH . . . SEE FOR YOURSELF HOW THE NEW SPEED AND NEW ECONOMY OF THIS MACHINE WILL ENABLE YOU TO COIN NEW PROFITS FOR YOUR MILL

TOMPKINS BROS. CO.

ESTABLISHED 1846

629 Oneida St. • Syracuse 4, N. Y.

Water Purification

(*Continued from page* 121)

proved greatly. We get better evenness and penetration of dyeings, and our production in the dyeing department has increased because lots seldom have to be rerun because they are off shade. There is a saving of $100 a wk. in the use of chemicals.

Our wet-finishing operations previously called for the use of a vast quantity of soaps, detergents, and softeners. Since the installation, with the water controlled as to pH and hardness, it was found that less soap was required and the use of softening compounds was eliminated. These savings account for an additional $125 a wk.

Under the old system, our boilers became scaled both in the tubes and drums, and we were obliged to use chemicals to help control this scaling. At the end of each year, we had to shut down and acid-clean our boilers.

After the use of the softened water, the scaling of our tubes and drums stopped, and we no longer needed the chemical solutions or the service of the tube cleaners. Our boilers are now kept in perfect condition, and we save at least $900 annually that the chemical applications and cleaning used to cost.

Over-all savings derived from the water-filtering and water-softening apparatus amount to $12,150 every year, based on 50 weeks of operation. The installation has more than paid for itself.

Uniform Picker Laps

(*Continued from page* 120)

How Scales Are Calibrated

We calibrate our lap-meter scales to insure accuracy. A 15½-oz. weight is put on the weighing platter, and a 15-oz. weight is put on the scale pan. If the dial reading is 0.50 oz. on the heavy side, we know the scale is accurate. Similar tests are made at other weights and differences as well.

If the scale is out of calibration we check to see if lint has gotten into the dashpot. If so, the lint is removed before a fresh supply of oil is put in the dashpot. We also make sure that no lint is lodged in the plunger before we put in the new supply of oil.

Cleaning Completes the Program

We put a lot of emphasis on proper cleaning of our pickers, and we try to do an intelligent job of cleaning. Our pickers are cleaned for approximately 20 min. before the start of

Tested patterns to meet today's needs . . .

Jenkins cast steel Valves

for dependable economy

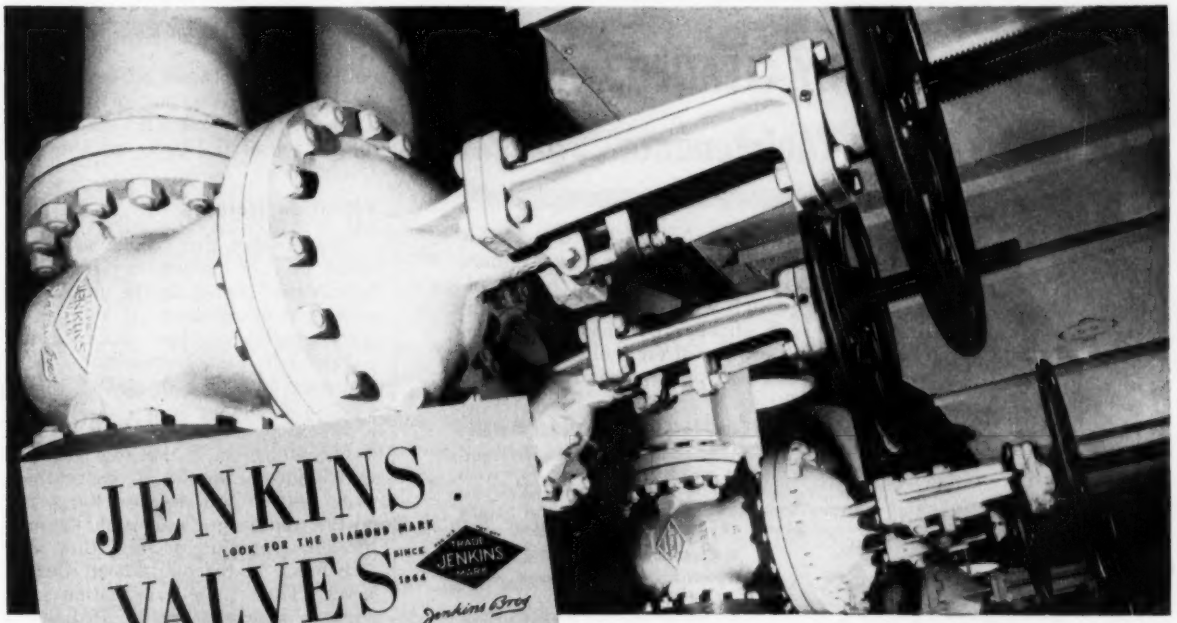
in high pressure

—higher temperature services

Mounting pressures and temperatures in power generation and industrial processing call for Cast Steel Valves. For this increasing need, Jenkins offers a wide selection of patterns that have met the test of the toughest services throughout industry.

In these valves, Jenkins provides a wide margin of strength and safety beyond ratings. Special refinements in design extend their service life, assure long, trouble-free performance. Efficiency and low maintenance records measure up to the high standards established for all valves developed by Jenkins Valve *specialists.*

The new Cast Steel Valve catalog gives complete information. Write for your copy today. Jenkins Bros., 100 Park Ave., New York 17.



Get this NEW Cast Steel Valve Catalog

Describes Globes, Angles, Gates, and Checks with detailed pressure ratings, dimensions, and other technical data covering all patterns of Cast Steel Valves now available from Jenkins. Send the coupon for your copy.

JENKINS BROS., 100 Park Ave., New York 17

Please send catalog of Cast Steel Valves.

Name.....

Company.....

Address.....

.....

 For more information, write direct or use Reader Service post card.

These floors are 5 times brighter than before
LIGHT METER shows 60 foot candles reflected from dry-cleaned floor, 10 foot candles from scrubbed floor. (Name of customer on request.)

Because they're DRY CLEANED, with the *TENNANT* Floor Maintenance *System*

Measuring light-reflection with a meter, this mill superintendent finds that his Tennant *dry-cleaned* floors are 500% brighter than adjacent areas (which were scrubbed). In addition dangerous slip-hazards have been decreased, rough spongy surfaces eliminated and average cleaning *time* per square foot has been cut by about 80%.

Safe Working Conditions Boost Employee Morale!

Dark, slippery, oil-soaked floors absorb light, cause accidents and lower morale. But with the Tennant System *your floors can quickly be reconditioned* and made clean, dry and bright —real assets to your mill's production.

- ***Restores.*** Removes dark, soft topwood fibers; leaves sound, vigorous surface.
- ***Hardens.*** Seal fills, binds, hardens floor. Makes it bright, durable.
- ***Dry Cleans.*** Eliminates scrubbing! Keeps floors clean, smooth, bright. Fast, convenient, economical.

WRITE FOR BULLETIN

G. H. TENNANT CO.
2586 N. 2nd Street
MINNEAPOLIS 11, MINNESOTA

Tennant Floor Machines are available for 8", 12" and 16" drum accessories.

ELIMINATE SCRUBBING
The way to finer floors
TENNANT
Floor Maintenance System

each shift. This cleaning consists of cleaning out chokes, pulling motes, raising beaters and screen covers, removing chokes, blowing off the picker, and cleaning up and disposing of waste.

Our operators are cautioned to do a first-class job of cleaning, especially the screens and the clearers. Sometimes while checking a lap on the lap scale the experienced observer will notice a heavy yard and when checking closely will notice that a choke not properly cleaned fell from the screen into the picker and showed up on the lap. This yard can be shown to the tender to impress him with the importance of doing a careful and intelligent cleaning job. Our week-end cleaning is also done in a thorough, careful, and intelligent manner. Of course the week-end cleaning is more thorough and more time is used for it.

Spindle Vibration

(*Continued from page 125*)

position. The balanced bobbin will be 0 Universal Units out of balance. These facts may illustrate the reason for the use of the Universal Unit of Unbalance.

Vibration Isolated

The vibration that cannot be eliminated may be reduced by selecting bobbins and decreasing the unbalance in the rest of the machine. For many years spindles have been mounted on pads of felt, rubber, cork, and other materials and pressed against these pads by compression springs. These pads give spindle steps a freedom they would not have if the step flanges rested directly on the incompressible swing surface and decrease the wear on the step flanges and swings caused by vibration. But, in turn, they absorb much of the punishment themselves. Their value as vibration isolators is generally very limited, and often the vibrations of the bolster and the swing stand are almost the same.

The use of neoprene washers is an improvement. Unlike felt, cork, and rubber washers in compression, this method of suspension has excellent vibration-isolating properties. When the bolster vibrates, it moves laterally on two elastic sandwiches. A large proportion of the spindle vibration is isolated; and the swing plate, body, and the rest of the machine are hardly affected by even severe spindle vibration. The result is a great decrease in machine damage and maintenance due to spindle vibration.

Vicara® ZEIN FIBER loves everybody!

You heard us! Sure-as-spinning, *Vicara* is wild about wool, nuts about nylon, coos over cotton, raves about rayon, "oohs" and "ahs" over ORLON[1] and ACRILAN[2], thinks DACRON[3] and Dynel are simply divine!

Vicara loves every fiber—because *Vicara* blends with any fiber to make a better fabric. *Vicara* is the fiber that improves the blend—any blend and every blend.

Maybe you've got a blend on *your* brain—a blend that's got possibilities, but's missing something. Something like luxurious softness or moisture absorption. Or maybe the wrinkles won't hang out.

If this is sad but true, then *Vicara* is the baby for your blend! In addition to soft luxury and glorious comfort, *Vicara* is completely washable, resists moths and mildew—and possesses the rare ability among man-made fibers to dissipate static.

Vicara has an impressive collection of Success Stories—in shirts, dresses and suits, blankets, socks and sportswear. It's too bad that there's not more *Vicara*—because *Vicara* loves everybody and has so much to contribute to every blend!

1. Dul'ont's trademark for its acrylic fiber.
2. Chemstrand's trademark for its acrylic fiber.
3. Dul'ont's trademark for its polyester fiber.

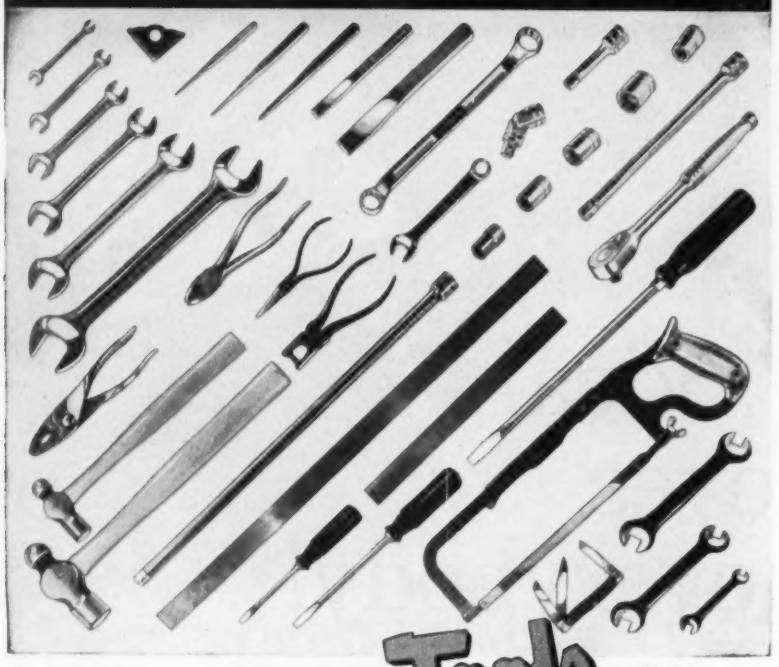
Vicara®

THE FIBER THAT IMPROVES THE BLEND

UNIFORMITY • BEAUTY • VERSATILITY • ECONOMY • EASE IN USE • SPINNABILITY
DYE-ABILITY • WARMTH • HANDLE, FEEL AND DRAPE • ELASTICITY • RESILIENCE
ABSORBENCY • HEAT RESISTANCE • WASHABILITY • NON-FELTING • NON-ITCHING
NO ODOR • NO KNOWN ALLERGIES • MOTH RESISTANCE • MILDEW RESISTANCE

Fiber Division • Virginia-Carolina Chemical Corporation • 500 Fifth Avenue, New York 36, N.Y.

BEST BUY! in any loom fixer's kit



*Snap-on Tools SET No. 2040-LF

make skilled hands quicker, surer, safer

With a carefully-planned special set of Snap-on loom fixer's tools such as these, a good loom fixer is a more valuable man —for the mill as well as himself.

He's a safer man on the job, because he's got the *right* tools—tools that fit properly, balance right, don't slip. He's faster on the job because Snap-on Tools bring out all the natural skill in a man's hands. He's surer, because, whatever the adjustment or repair, he has the tools to do it *right*.

He's a real profit factor, because his looms will show fewer breakdowns, less down-time, less sub-standard production.

The Snap-on factory-trained tool man is *always* at your service, between his regular visits. Tool surveys or special tool consultations cost you nothing. Write for address of nearest Snap-on factory branch.

SNAP-ON TOOLS CORPORATION
8100-C 28th Avenue, Kenosha, Wisconsin

*Snap-on is the Trademark of Snap-on Tools Corporation.

Gas-Fired Boiler

(*Continued from page 124*)

supply of coal, have forced many industrial concerns to switch to more dependable fuel supply. That is what Rome Hosiery did. But it also found savings not originally anticipated.

For one thing, fluctuating peak boiler demands can be met instantaneously and automatically. Another thing, operations do not require constant manpower attention. Operations are much cleaner, and there is not a lot of fly ash in the air when oil or natural gas is used as fuel.

Natural gas is the regular fuel, with oil as standby. Change over from one fuel to the other can be accomplished in about 5 min. without loss of boiler pressure. It is a matter of switching connections and inserting the oil blowers.

Inspection and Maintenance

While the system of automatic boiler control has many advantages, there are a few pointers that must be observed if maximum efficiency is to be attained. Fuel pressure, water levels, and flow of air must be maintained. Therefore, inspection should be made regularly.

Every three months the tubes are washed down, generally over the week-end. At the same time, all auxiliary equipment is thoroughly inspected and lubricated and necessary repairs are made.

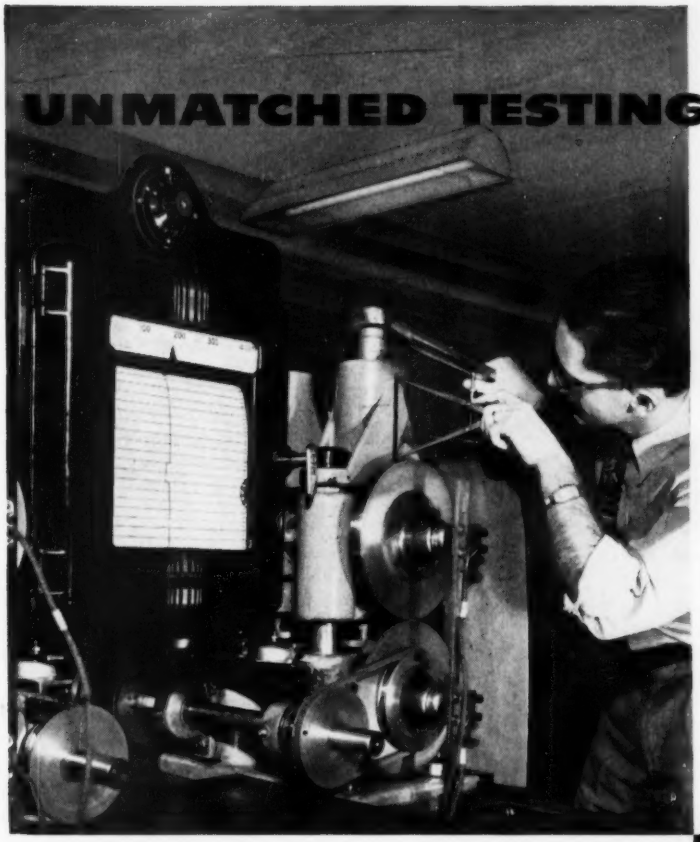
Piping arrangements in the mill were designed for ease in operation and control. Steam from the boiler goes to a common header, from which it is piped to the boarding room, dye room and bleachery, the heating system, and the electric-power generator. Each system can be individually regulated from the central header.

Equipment in the boiler plant in-

Boiler-Water Analysis

Suspended matter	Trace
Sediment (volume percent)	0.33
Color	Clear
Order	None
pH	11.5
"P" causticity (as $CaCO_3$)	24.8
"M" total alkalinity (as $CaCO_3$)	30.8
Chlorides (as NaCl)	4.0
Calcium hardness (as $CaCO_3$)	—
Magnesium hardness (as $CaCO_3$)	—
Total hardness (as $CaCO_3$)	0.4
"Mhos" micromhos specific conductance	1200
Total dissolved solids	48.0

pH of City water about 8



UNMATCHED TESTING FACILITIES...

one of many reasons for Hyatt leadership!

In testing laboratory or manufacturing plant, Hyatt's facilities are second to none. Continuing research in methods and materials, and exacting inspection with the finest in modern equipment, has made the Hyatt name a synonym for "highest quality." That's why Hyatt Roller Bearings are so widely used by leading manufacturers of textile machinery. Their design engineers know that Hyatt bearings have been "performance-proved" for smoother, trouble-free operation and longer life. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

 For more information, write direct or use Reader Service post card.

World's NEWEST Synthetic Fiber to be made at the OLDEST site in Virginia!

History and Progress go hand-in-hand in the Old Dominion

AT THE site of the oldest continuous settlement in Virginia, founded in 1613, the manufacture of the newest synthetic fiber of the polyamide (nylon) type will soon begin.

Within the very shadow of a marker to John Rolfe, English husband of the beloved Pocahontas, the National Aniline Division of Allied Chemical Dye Corporation is erecting a new synthetic fiber plant. The sketch of the building pictured above is the architect's conception of the proposed laboratory and administration facilities. Thus, the most modern process in the textile fiber industry will come alive, in 1953, at Bermuda Hundred which in 1614 became the first incorporated town in Virginia. It is the privilege of the Virginia Electric and Power Company to supply the vital electric power to the Richmond - Petersburg - Hopewell area, of which Bermuda Hundred is a part. Already serving an impressive list of industries, including tobacco, chemicals, luggage, optical goods, paper, rayon, cellophane, and many others . . . VEPCO is proud to supply *power-aplenty* to help increase domestic capacity for production of the synthetic fibers which mean so much to the American standard of living.

VEPCO'S Chesterfield Power Station on the James River between Bermuda Hundred and Richmond has 250,000 KW capacity. From this station, a new 110,000 volt tie has recently been completed to Hopewell.

The supply of *plentiful, cheap* and *dependable* electric power . . . plus good water supplies, excellent rail, highway, air and waterborne transportation, and ample nearby labor sources . . . are some of the reasons Allied Chemical chose the Hopewell-Bermuda Hundred area for its $23-Million plant and the mammoth operations to be conducted therefrom.

Here, on land hallowed by the enterprise of early Americans, is evidence again that good business management is the nerve system of America's *Industrial domain* . . . spreading from *local communities* which are its heart and core.

INDUSTRIAL DEVELOPMENT DEPARTMENT

VIRGINIA ELECTRIC AND POWER COMPANY

RICHMOND, VIRGINIA

cludes the 209-hp. Union water-tube boiler, a Webster Engineering Co. draft-compensating combustion controller, a Wheelco Instrument Co. flame control, a Minneapolis-Honeywell gradutrol system of pneumatic controls, and auxiliary equipment.

Power is generated by a General Electric a.c. 100-kw., 60-cycle, 257-rpm., 125-kva., 0.8-p.f., 240-v. steam generator. Off the main generator shaft is operated, by means of V-belts, a Crocker-Wheeler 120-v. 600 to 1800-rpm., 10 to 20-kw. generator. As an emergency measure, the mill has installed a Westinghouse 10-kw. d.c. generator.

Georgia Power Co. furnishes standby electric service to the mill. On week ends when the mill is not operating, a switch is made to Georgia Power Co. lines.

Part of the savings in steam-plant operations is effected by using the exhaust steam from the power generator to heat all water used in the dyeing and bleaching departments. This exhaust steam has a temperature of 120 to 130° F.

Boiler Water

Constant check is made of boiler feed water, and water analysis is maintained within close limits. As a check on its own analysis, the mill sends samples to Anderson Chemical Co., Macon, Ga., for laboratory tests.

Here is the way the mill figures its boiler water should analyze, within limits, to produce the best results:

Suspended matter should be zero, or nearly so, to prevent foaming and priming in the boiler. Sediment should be kept fairly low by frequent blowdown and washout. The pH should be kept between 10.5 and 11.5 to prevent corrosion and pitting of boiler metal.

Concentration of chlorides should be maintained below 10.0. High values introduce the possibility of corrosion and other undesirable conditions.

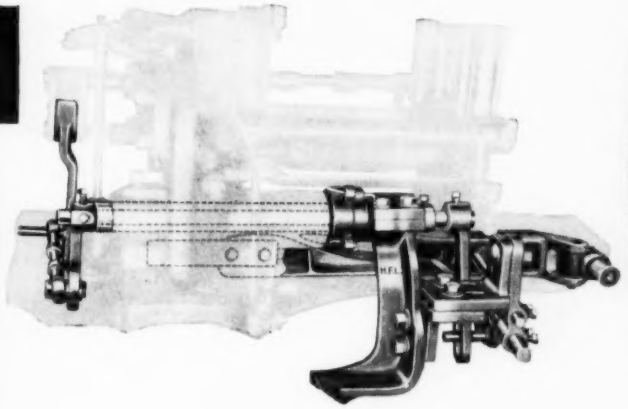
Total hardness should be between 0.1 and 0.5. Values above 0.5 allow scale to deposit, and values down to 0.1 and below may indicate overtreatment and waste of chemicals.

used with Magazine on W-2 and W-3
WOOLEN and WORSTED LOOMS

it's new* . . . and it's keeping

LIVERMORE

in the LIMELIGHT:



ELIMINATE "DRAG-INS"

with this
SHUTTLE-EYE, POSITIVE ACTION
HFL IMPROVED THREAD CUTTER

it CUTS . . . at the shuttle eye
leaving a short tail. A number of these HFL Improved THREAD CUTTERS have been on *3-shift operation for more than 18 weeks* (up to time of publication of this advertisement) with NO DRAG-INS from outgoing bobbins!

it HOLDS . . . balance of filling
and draws it over the binder rest until it is cut by the temple. The filling then drops below the lay, eliminating drag-ins that normally originate from this source.

Not only is this Thread Cutter exclusive with LIVERMORE, but it comes complete with a unique, aluminum **SLOTTED FLOATING BINDER** which cannot tip, thus keeping the face of the binder in line with the shuttle for better control.

Send for descriptive literature.

HFL
IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.

* patent applied for

introducing...

to the American Textile Industry

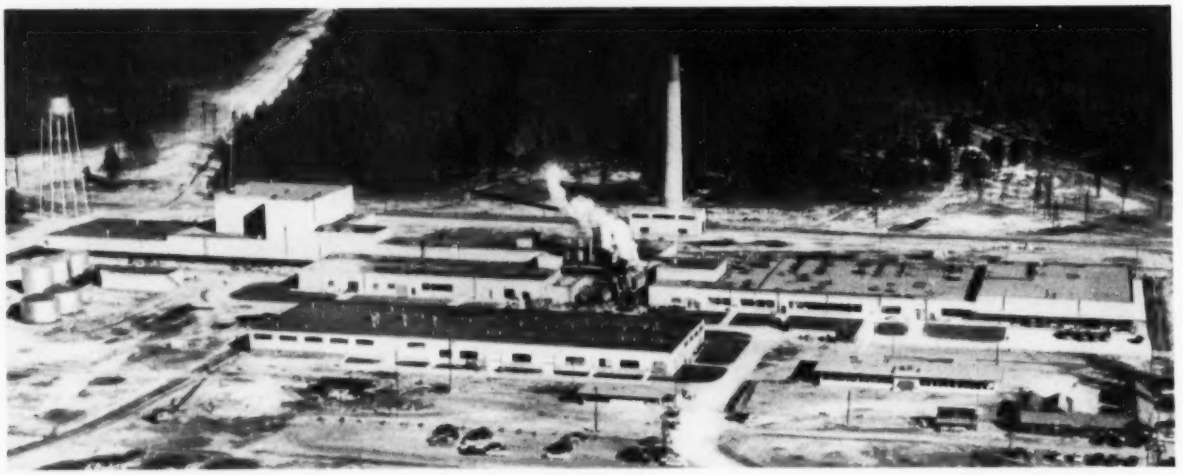
Courtaulds

the world-famous name in rayon

The newest, most up-to-date and efficient rayon staple plant in the world is now in production at Mobile, Alabama. Ultra-modern equipment that has no equal anywhere makes possible precise techniques and rigid controls which eliminate human error—a textile engineer's dream come true.

Avail yourself immediately of the benefits resulting from these latest improvements in the manufacture of viscose rayon staple.

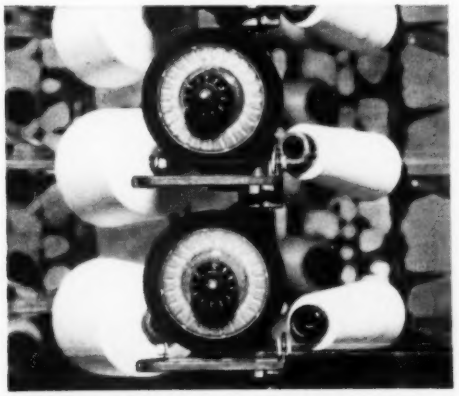
COURTAULDS INC. • 600 Fifth Avenue • New York City



For more information, write direct or use Reader Service post card.

CHANGING TENSION IS EASY—a turn of the adjustment cap presets desired tension. Duplication of tension is precise.

Yarn tension kept uniform by new G-E tension brake



SMOOTH, FRICTIONLESS TORQUE—substantially constant over a wide speed range—is provided by this new G-E yarn tension brake.

Simplifies pre-setting, holds stalled tension

Textile operators can now hold constant tension on all ends . . . without scuffing—with a simple setting of the calibrated adjustment cap on the new G-E yarn tension brake.

Adaptable to many textile mill applications, the new brake eliminates scuffing and excessive flexing of delicate yarns. There's no pinch friction to abrade or fracture the yarn. Wrapping around sharp angles is kept at a minimum.

The new tension brake—while allowing easy tension settings over a range of 4 to 10 grams at speeds up to 600 yards per minute—holds stalled tension, too. The brake attempts to reverse direction of rotation after decelerating to a standstill. Torque remains in the "standstill" or "off" position.

If you are interested in accurate, constant-tension control of natural, synthetic, or glass-fiber yarns, contact your nearest G-E Apparatus Sales Office or write for Bulletin GEA-5472. General Electric Company, Schenectady 5, New York. 654-29

You can put your confidence in—

GENERAL ELECTRIC

 For more information, write direct or use Reader Service post card.

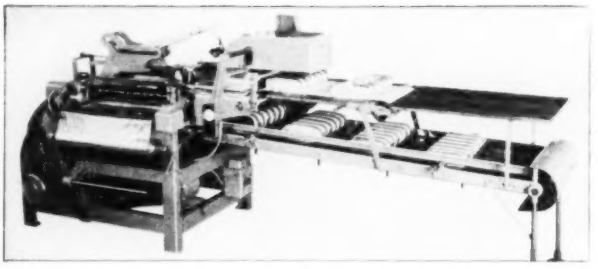
HAYSSEN MFG. COMPANY

Since 1910, One of the World's Largest Manufacturers of Wrapping Machines

DEPT. TW-3, SHEBOYGAN, WISCONSIN

WRAP ALMOST ANY SHAPE OR SIZE PRODUCT AUTOMATICALLY WITH A HAYSSEN ...SAVE HALF YOUR MACHINE COST

ADD EXTRA BUY APPEAL TO
Cheese Cloth, Curtains, Bolts of Fabric, Handkerchiefs, Hosiery, Pillow Cases, Sheets, Shirts, Towels, Underwear, Yarn ... practically any textile product.



● The Hayssen wraps 35 or more packages per minute with one operator . . . gives EXTRA PROTECTION FOR YOUR PRODUCT. You'll have a neat, tight, uniform package with electric-eye registration of the printed overwrap.

Hayssen Wrapping Machines handle heat-sealing cellophane, pliofilm, polyethylene and paper. These textile machines wrap the product by itself or with cartons, trays, flat cards and u-boards as required . . . handle the most delicate, fragile or fluffy materials.

Hayssen machines are unmatched in performance, low first cost, overall economy of operation and maintenance. Many Hayssen units are in use today that were purchased over 20 years ago.

WRITE for folder on Hayssen Wrapping Machines. Tell us your wrapping problems ... we have the answer.

IT PAYS TO WRAP THE HAYSSEN WAY

Hayssen MFG. COMPANY

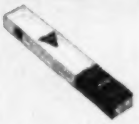
BAKED GOODS

MEATS

TEXTILES

VEGETABLES

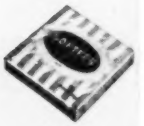
FROZEN FOODS


ODD SHAPES

CANDY

ICE CREAM

DAIRY


PAPER

Synthetic Fibers

(*Continued from page 100*)

is the only one of real commercial importance today. It is a melt-spun fiber with unusually high tenacity. It has a very high extensibility and a uniquely low modulus at low strains. Its resilience characteristics are good, although the time of recovery from large strains is rather high. Its first great success was the replacement of silk in women's hosiery yarns where, of course, it is used in the continuous-filament form. Its great strength and ability to absorb energy, dynamically or statically, has made it useful in any number of industrial and military applications—thread, ropes, tire cord, sail cloth, parachute shrouds, body armor, etc. In continuous-filament form it has wide acceptance in satins, taffetas, marquisettes, and underwear fabrics, particularly tricot. It finds a limited use in men's shirtings, where its quick drying is an attraction for the traveler. In general, however, a nylon shirt is judged uncomfortable in hot weather, possibly because of low moisture absorption.

As with most of the synthetics, the staple form of nylon is made with lower orientation and hence lower tenacity. It can be crimped by several methods so that it can be blended with other fibers on the woolen, worsted, and cotton systems of spinning. Blended in an amount of only 30% in a woolen hosiery yarn, it conveys an amazing resistance to wear and reduces felting shrinkage greatly. It is also used in suiting materials but does not appear to have quite the potential of the acrylics and the polyesters for improving wrinkle resistance and crease retention. Neither does it have the bulking power of some of the other synthetics, in spite of its low specific gravity, for it has the circular cross-section characteristic of a melt-spun fiber.

The dyeability of nylon certainly does not compare with that of viscose rayon, cotton, or wool. However, techniques have been worked out that permit the use of acetate, acid, and chrome dyes as well as some direct, vat, azoic, and basic colors. It has a reasonably good chemical stability, although it loses strength gradually upon exposure to sunlight and goes to pieces in acids. Continuous-filament nylon has a cold unpleasant feel to the skin, and some types of fabric have a decidedly limp hand. While nylon has proved a good replacement for silk in hosiery yarns, it is sadly deficient in "scroop" (tendency to rustle), which seems to be desirable in women's dress fabrics. In common with the other hydrophobic fibers, it offers problems

This Picture IS WORTH 1000 WORDS!

Show Safety Saves!

to Your Drivers

1 "It's fun to watch the scenery; it's *safer* to watch the road."

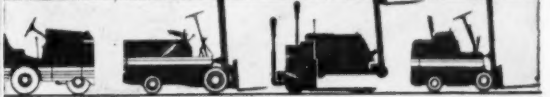
2 "All right then . . . you won't make that mistake again!"

WHEN IT COMES TO TRAINING industrial truck operators, one picture is worth a thousand words. Clark's new "Safety Saves" movie is the only driver safety-training film in the materials handling field. It's a 30 minute sound movie, filmed entirely "on-the-job", and it's available to you on a loan basis.

You (and your drivers) will see hair-raising examples of how *not* to handle a fork truck, as demonstrated by Willie the Cowboy. After you've seen Willie's way, you'll see the safe, correct way to drive and take care of a truck. To help cut accidents and improve driver performance, *all* your drivers should see "Safety Saves". Use the coupon to indicate when you want it—the only cost to you is return postage.

1903 1953 FIRST FIFTY YEARS CLARK EQUIPMENT

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS AND POWERED HAND TRUCKS · INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIVISION · CLARK EQUIPMENT COMPANY · BATTLE CREEK 27, MICHIGAN

Send "Safety Saves" Date wanted_____

Alternate dates_____

Name_____

Firm Name_____

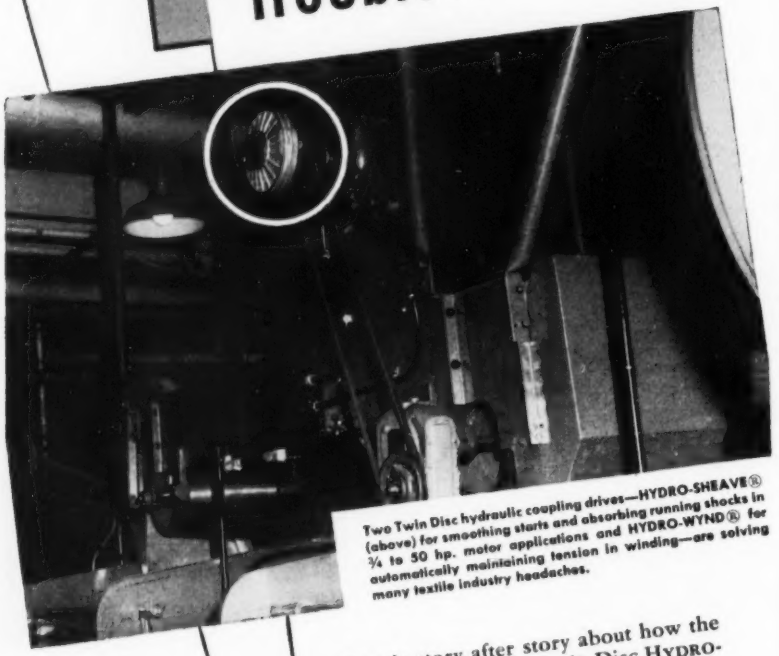
Address_____

City_____ Zone____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

For more information, write direct or use Reader Service post card.

Tenderizes tough, textile trouble...



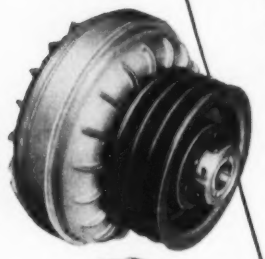
Two Twin Disc hydraulic coupling drives—HYDRO-SHEAVE® (above) for smoothing starts and absorbing running shocks in ¾ to 50 hp. motor applications and HYDRO-WYND® for automatically maintaining tension in winding—are solving many textile industry headaches.

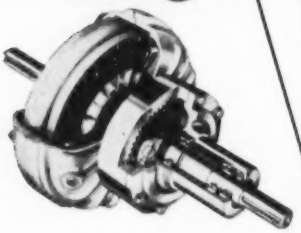
There's story after story about how the simple, quickly installed Twin Disc HYDRO-SHEAVE® package drive is eliminating production headaches throughout the textile industry. For example:

Frequent production interruptions were occurring on reversing aprons in the plant of the Cone Mills Corporation, Greensboro, N. C., due to slippage and delayed action with the dual pulley drive system. Motors and drives were being damaged, creating serious maintenance problems; further delays were caused by frequent plugging between aprons and condensers.

When these difficulties virtually disappeared on aprons equipped with HYDRO-SHEAVE® Drives, Cone officials authorized an extensive conversion in several mills.

For a quick solution to such problems, contact your Twin Disc Hydraulic Products Dealer or nearest factory branch.





Center: HYDRO-SHEAVE® Drive.
Above: HYDRO-WYND® Drive.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin · HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND · DALLAS · DETROIT · LOS ANGELES · NEWARK · NEW ORLEANS · SEATTLE · TULSA

in soiling, local melting, flammability, static electrification, and wicking. It has absolutely no felting properties—a deficiency and a great virtue.

Nylon is the pioneer synthetic that, without major change, has an assured future. It has largely replaced silk, but it is doubtful that wool and cotton will suffer much from its introduction unless its price can be brought down appreciably.

Polyacrylics

The polyacrylic fibers have many properties in common. They are all strongly hydrophobic. Only two varieties are in full production—Orlon, which is essentially polyacrylonitrile, and dynel, a copolymer of acrylonitrile and vinyl chloride. They are both solvent spun and have low specific gravities; thus they have high bulking power. Orlon is made both in continuous-filament and staple forms; and dynel, a staple fiber, has a continuous-filament counterpart known as Vinyon N.

Both fibers are superior to nylon in tactile properties and, in the staple form, have a more wool-like mechanical behavior. Both have excellent resistance to solvents, alkalis, and acids and thus have many industrial applications. As with all the true synthetic fibers, the degree of orientation may be varied considerably to give the properties desired. For example, continuous-filament Orlon is so oriented that its stress-strain curve practically coincides with a high-quality silk, while staple Orlon has stress-strain behavior approximating that of "dry" wool. Possibly the low tenacity of staple Orlon partially explains its superiority over other hydrophobic fibers in resistance to pilling. Orlon has one outstanding property—amazing performance in outdoor exposure. On the other hand, it is flammable after melting; dynel is the only organic synthetic fiber that does not support combustion.

Both Orlon and dynel suffer from the difficulties inherent in hydrophobicity—difficulty of dyeing, static electrification, and discomfort in underwear and shirting applications. Because they are thermoplastic, the fibers offer problems in low ironing range (especially dynel), and local melting. Nevertheless, staple fibers of Orlon and dynel have enjoyed considerable success in blends with wool for apparel fabrics. They also have definite possibilities in launderable blankets and certain types of pile fabrics.

Two of the newer acrylics are particularly promising from the standpoints of dyeability—Acrilan, which is a copolymer of acrylonitrile and vinyl

One of the major advances in television reception is the result of Pittsburgh Plate Glass Company research that produced Teleglas. Within less than a year after its first commercial use, this "gray glass" had become the industry's standard facing for cathode-ray picture tubes. The sharp contrasts and the elimination of dazzling brightness, faded grays and "halos" are the contribution of PPG Teleglas to the modern television receiver.

A leader in glass research—and with 70 years' experience in large volume glassmaking—Pittsburgh Plate Glass Company is now drawing upon these skills in the manufacture and development of Fiber Glass. If your products use Fiber Glass—either Superfine Insulation, or Yarns, Strands or Roving—there may be advantages you can obtain by specifying "*Pittsburgh.*" You are invited to obtain complete information on facilities for serving you. Pittsburgh Plate Glass Company, 632 Duquesne Way, Pittsburgh 22, Pa.

Making products better, safer, lighter, stronger

If your products need light-weight, durable insulation . . . if they require exceptionally strong reinforced plastics . . . if they need tough, weather-proof, flame-proof fabrics, or highly efficient electrical insulation—then PPG Fiber Glass may be an important factor in your planning. Field engineering service, or product data and other information, may be obtained through executive offices in Pittsburgh, or district sales offices in Chicago, Cincinnati, Cleveland, Detroit, New York and Washington.

FIBER PPG GLASS PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

. . . Especially Designed by Darnell Engineers for Use on
DOFFING TRUCKS

THE XE-74-WCI

Darnell designed for Doffing Trucks here is a caster that will give years of trouble-free service. . . that stands the abuse peculiar to Doffing Truck operation. Note the extra-heavy rimmed, high crowned Darnelloy wheel, featuring closely fitted string guards which keep caster free-rolling at all times. Extra heavy ball races and cones with solid row of precision balls. Alemite Zerk lubrication. Wheel designed for large grease capacity.

Why Not Ask Your Distributor To Show You This New Caster

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

acetate, and X-51, a copolymer of acrylonitrile and methyl methacrylate. The latter is unique among the acrylic fibers because it is wet-spun, a process said to introduce a microporosity beneficial to dyeing and surface properties. Both of these fibers have shown promise in small-scale textile experiments, but it is too early to venture an evaluation of either.

The polyacrylic fibers seem to have definite possibilities, particularly in the woolen and worsted fields where they are competing with the most expensive of natural fibers. They fall far short of wool in many of its properties but have certain distinct advantages in their greater tenacity and unusual wrinkle resistance and crease retention in the wet state. Their futures will depend upon success in correcting their deficiencies and reducing the costs of raw materials and processing into fiber form.

Polyesters

There is only one commercially available polyester fiber, polyethylene terephthalate, which is known as Dacron in this country and Terylene in England. It suffers all the ills that can be associated with a strongly hydrophobic, thermoplastic fiber. It is outstanding, however, in endowing wrinkle resistance and crease retention to suiting fabrics, either blended with wool or alone. It has very good fatigue properties in continuous-filament tire cords, but its immediate future will be as a staple fiber in apparel uses. As with the polyacrylics, a great deal of effort will have to be expended in correcting its technical defects and reducing costs of raw materials and processes.

Other Synthetic Fibers

There are a number of other synthetic fibers that cannot be classified as polyamides, polyacrylics, or polyesters. Since none of them has at present much importance in apparel uses, they will be discussed very briefly.

Polyethylene fiber is made commercially on a small scale and is used in upholstery, shoe, and handbag fabrics. It is completely hydrophobic but has a rather low tenacity. Unfortunately, it has a low melting point that limits its usefulness, but it can be made at relatively low cost.

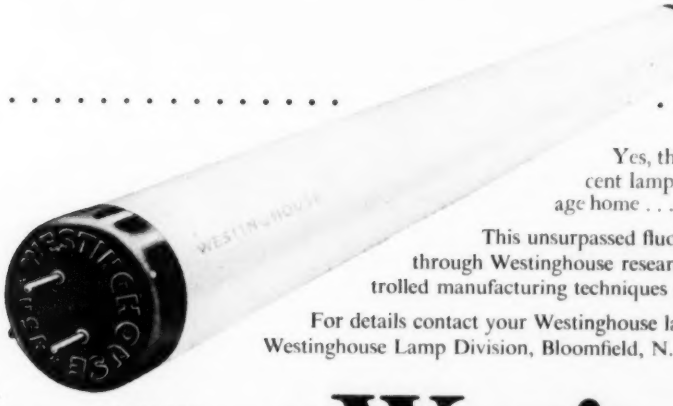
There are a number of vinyl fibers of interest primarily for chemical applications. One of these, Vinyon HH, is produced in quantity. The vinyl-vinylidene chloride copolymer fibers, saran, Velon, etc., are produced commercially in monofilament form and find wide application in upholstery fabrics and window screening. They

For more information, write direct or use Reader Service post card.

HE'LL GROW FROM THIS

TO THIS

BEFORE YOUR WESTINGHOUSE FLUORESCENT LAMP BURNS OUT



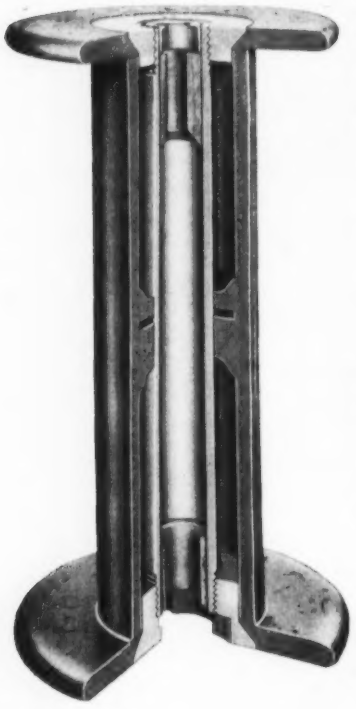
Yes, the standard Westinghouse Fluorescent lamp burns for many years in the average home . . . for 3½ years in an office or factory.

This unsurpassed fluorescent lamp life span is achieved through Westinghouse research, engineering, and carefully controlled manufacturing techniques and processes.

For details contact your Westinghouse lamp supplier or write to Westinghouse Lamp Division, Bloomfield, N. J.

YOU CAN BE SURE... IF IT'S Westinghouse

LESTERSHIRE "NB" BOBBIN found "FAR SUPERIOR"



WE don't ask anyone to take our unsupported word for the superiority of NB Bobbins over the types of bobbins elsewhere available. We freely supply samples for individual tests by mills.

Here are conclusions given us by a mill owner who has made his own tests:

"We put nylon yarn on the NB Bobbin under full tension.

"We found the NB far superior to other types we have tested and used. We were surprised there was so much difference.

"After accelerated time tests, we put NB BOBBIN'S life at 10 years, as against 2 years for the best bobbin of other types.

"The heads are better fastened.

"Heads spring out slightly but come back instead of being permanently distorted as was the case with other bobbins tested."

THE Lestershire NB BOBBIN is designed specifically for inherent balance; to withstand the crushing pressures of nylon and other new synthetic yarns; to operate at higher spindle speeds safely and efficiently; to lessen spindle wear; to eliminate vibration, and to lessen bobbin investment.

Materials used are aluminum, center tube Phenolite (laminated bakelite), molded bakelite, or hard vulcanized fibre for heads and barrel.

Beveled aluminum bushings threaded to the central aluminum tube and locked in placed, hold the heads without screws.

Send for full description and samples for your own testing.

SEE IT AT
THE KNITTING ARTS EXHIBITION
ATLANTIC CITY, BOOTH 293

LESTERSHIRE SPOOL & MFG. CO.

140 Baldwin Street **Johnson City, N. Y.**

Division of National Vulcanized Fibre Company

Branch Offices and Technical Services:

Clifford E. Lathrop—7 Whitney Avenue, New Haven 10, Conn.
W. H. Hobbs—Room 833, 30 Church St., New York 7, N. Y.
Wm. S. Richards Co.—Clayton, St. Louis 5, Mo.
Odell Mill Supply Co.—Greensboro, N. C.
Greenville Textile Supply Co.—Greenville, S. C.
National Insulation Co.—Chicago 12
National Vulcanized Fibre Co.—Detroit
National Vulcanized Fibre Co.—Cleveland

have also been spun as fine continuous filaments that may sometime be found useful in apparel and drapery materials. Fibers have been spun in this country from polyvinyl alcohol insolubilized by a formaldehyde treatment, and such fibers are being produced commercially in Japan under the name Kuralon. They are being used in apparel fabrics but do not appear very promising because of the poor resilience of the fiber, which gives a very dead hand. Kuralon fibers have the peculiar property of dyeing a deeper shade in the central portion of the fiber. This property results from the failure of the formaldehyde to diffuse to the fiber axis within the allotted reaction period.

WHAT ABOUT THE FUTURE?

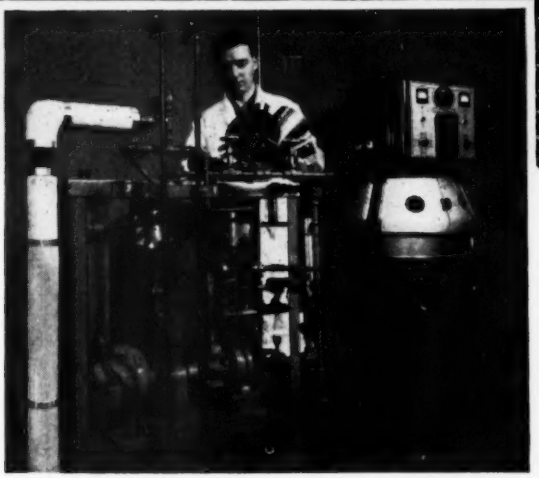
The synthetic fibers will continue to encroach more and more upon the domain of the natural fibers in industrial fabrics, where the principal demands upon a fiber are availability and performance per dollar. The situation in the apparel and decorative fabrics fields is more difficult to analyze because of our incomplete knowledge of the technical requirements of a fiber in clothing, the complicated economics governing the raw-material-to-finished-garment transition, and our inability to predict consumer whims of the future.

If we are to predict the apparel future of the man-made fibers, we must blind ourselves to the possibilities of radical changes in economics and consumer reactions. Let us consider the possibilities in the two great fields now dominated respectively by cotton and wool.

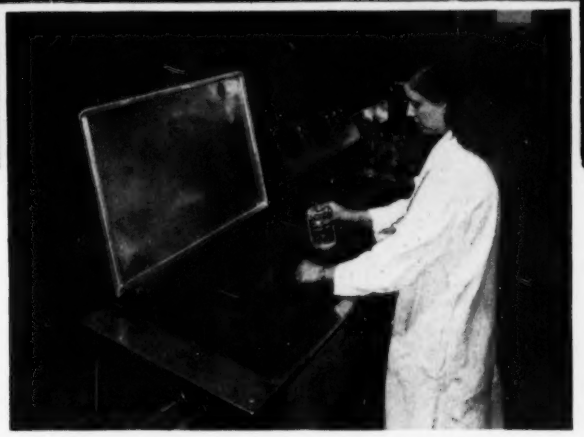
Cotton Has Lost Two Uses

A large part of cotton consumption in bagging materials has been taken over by paper, and most of the tire cord used today is of high-tenacity viscose rayon. In spite of these inroads, more cotton is being consumed today than ever before. And in view of the extensive research now being done on cotton to improve it and extend its uses, the cotton grower seems secure for some time. Although the current price of cotton is limited by government controls, it is still a relatively cheap fiber that certainly can compete with the newer synthetic fibers. At the moment, however, staple viscose and acetate are selling

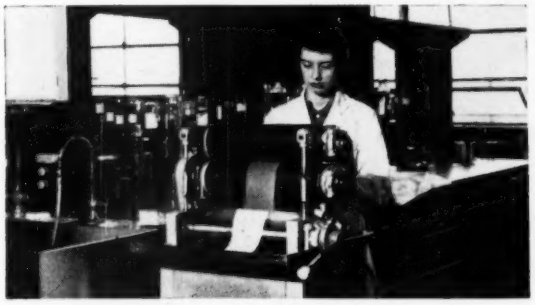
COMPLETE CUSTOMER SERVICE backs up PITTSBURGH'S BASIC DYESTUFF PRODUCTION



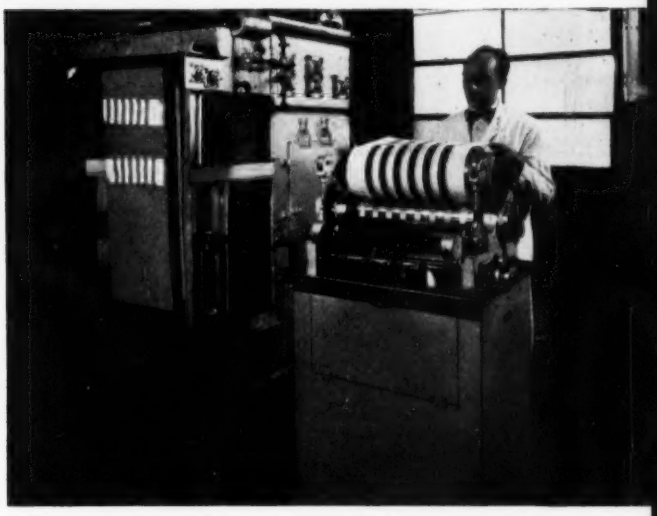
A new Customer Service Laboratory, operated by experienced personnel, stands behind every dyestuff order you place with Pittsburgh. Equipment like this pressure dyer and Fade-Ometer *guarantees* the quality made possible by Pittsburgh's coal-to-color production control.



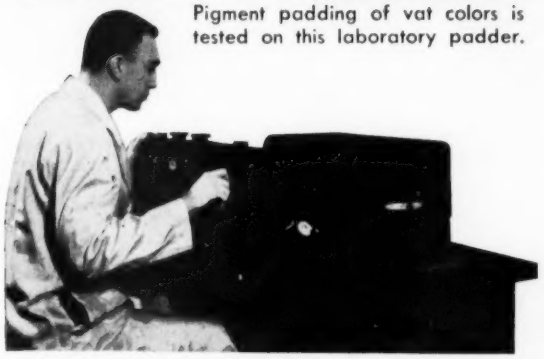
Fastness of Pittsburgh Dyestuffs to laundering is tested in laboratory in this stainless steel Launder-Ometer.



Pigment padding of vat colors is tested on this laboratory padder.



Printing and fixing characteristics of dyes are tested in printer in foreground and in vat ager in background.



A Spectrophotometer is employed in the analysis and standardization of Pittsburgh Dyestuffs.

FINE CHEMICALS DIVISION
Dyestuffs

PITTSBURGH
COKE & CHEMICAL CO.
Grant Building · Pittsburgh 19, Pa.

W&D 4571

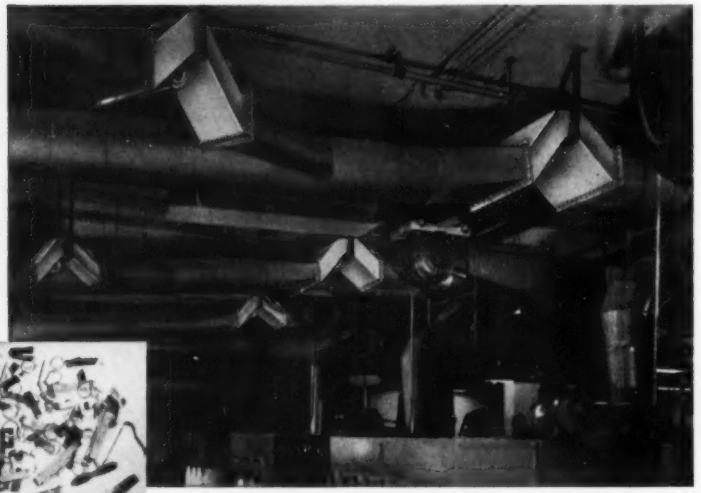
COAL CHEMICALS • AGRICULTURAL CHEMICALS • FINE CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

LEADING MILL Reports:

95% OF FIRE DANGER ELIMINATED IN SPUN RAYON PNEUMATIC LINES

5 ERIEZ Magnetic Humps Remove 3 lbs. of Tramp Iron Weekly

Five Eriez Magnetic Humps, installed in pneumatic pipelines between the opening room and pickers, and between waste hoppers and the central pipe to the pickers, are removing three pounds of spikes, travelers and other tramp iron (see insert) each week from spun rayon at a leading southern mill. Prior to the installation of the Eriez equipment, the company experienced two or three fires each month in their lines from sparks generated by tramp iron striking against processing equipment. "Since the Eriez Humps have been in operation, 95% of the fire danger has been eliminated!" reports the plant superintendent. Results: thousands of dollars saved in stopping fires, preventing machinery damage and increasing overall production.



Eriez patented Magnetic Humps prevent fires by removing *all* tramp iron bits in textile pneumatic lines before they get a chance to strike sparks or cause machinery damage. These powerful units require no attention aside from periodic removal of collected metal.

Only ERIEZ Magnetic Humps Have ALL These Features:

1. Available for air lines ranging in size from 2⅜" to 20" diameter.
2. Adapters available to convert pipe or outlets of any shape to the hump's rectangular opening.
3. The hump causes material being cleaned to change direction twice, causing a tumbling action . . . tramp iron impinges against magnets.
4. Cover adds to longitudinal stiffness . . . prevents tampering and accumulation of iron on backs of castings with consequent shorting of magnet circuit.
5. Non-magnetic insulation confines magnetic strength to working surface . . . no bleeding to surrounding areas.

Write for FREE 6-page Bulletin 563 which describes all Eriez magnetic separator installations for the textile industry.

ERIEZ MANUFACTURING COMPANY

11 Magnet Drive • Erie, Pennsylvania

Nine Out of Ten Textile Mills Specify ERIEZ

at a slightly lower price; and they must be reckoned with, property for property, in predicting the future of cotton in apparel fabrics.

Acetate does not seem a likely competitor to cotton on the basis of its much lower tenacity and other mechanical properties that resemble those of wool much more closely than those of cotton.

Viscose staple is definitely a threat and seems bound to replace cotton in certain applications.

Nevertheless, cotton is still a superior fiber in many respects, and its price can be brought down by increased use of mechanical harvesting techniques. Furthermore, the uses of cotton are being expanded.

The total consumption of cotton will be greater 10 yr. fom now than it is today. This is not to say that the man-made fibers will not find acceptance in many products now predominantly woven with cotton yarns. Undoubtedly they will, but 10 yr. from now cotton will still be "King of the Fibers" on a poundage basis, although cotton may drop percentagewise in consumption.

Wool Is Even More Vulnerable

Wool is a costly natural fiber compared to cotton, and it appears vulnerable to substitution by the man-made fibers. It is very difficult to establish a minimum price for raw wool that would permit reasonable profits to the grower and dealer. It is hard to predict the availability of wool, for the sheep also produces meat that will bring a good price. The high price of wool and the uncertainty of its availability in various grades is serious, but the possibility of fluctuations in its price is unfortunate.

Perhaps the greatest benefit that the wool branch of the textile industry will receive through the introduction of the man-made fibers will be a stabilization of wool prices.

But is wool worth what it costs?

Apparently it is. In fact, no man-made fiber has ever approached it in all-around quality, except possibly in tropical worsteds. Some of the hydrophobic fibers, notably Dacron, have been blended with it to enhance its wrinkle resistance and crease retention under moist conditions. Nylon has been blended with wool to give greater abrasion resistance and reduction in felting shrinkage. Vicara has been blended with it to give enhanced loft. In nonwoven felts, the wool fiber has found itself among many and varied neighbors but has never profited to any great extent from the association.

Wool might be the base material for blends of the future. The newer

LEADING THE KNIT PARADE

Gibbs

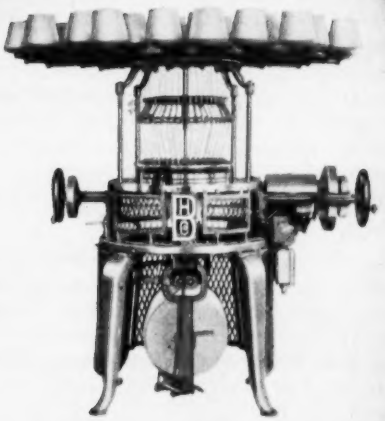
UNDERWEAR COMPANY
PHILADELPHIA 34, PA

To parents all over America the name GIBBS means top value and quality in underwear for children of all ages. The "Gibbs Kids" love to play and frolic in these comfortably-fitting, shrink-resistant garments.

It takes modern, high production knitting machines to produce garments that are tops in value and quality. That's why so many Gibbs garments are knitted on Brintons—machines that since 1888 have produced the finest fabric for the great names in knitwear.

Engineered for the World's Greatest Knitwear Makers

BRINTON
CIRCULAR KNITTING MACHINES
KENSINGTON AVE. & M ST., PHILA. 24, PA., U.S.A.



Model MERCEDES Style RMP

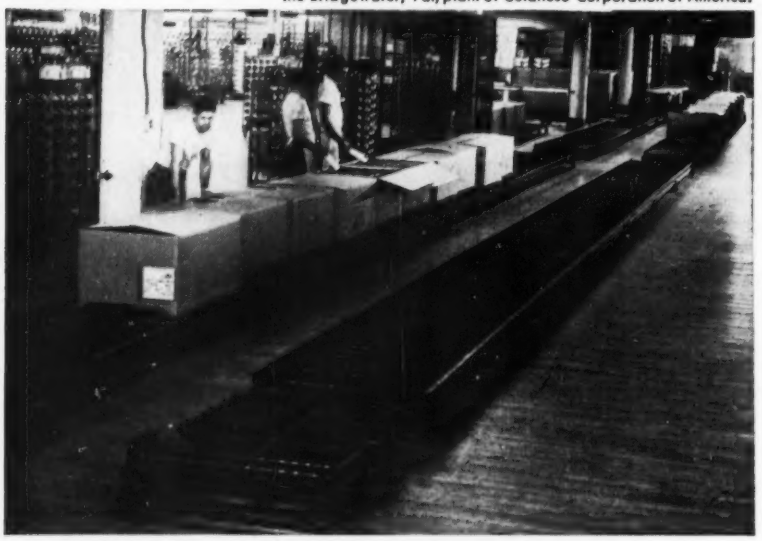
This high production revolving cylinder machine makes a wide variety of articles. It produces that fine balbriggan or plain jersey fabric for either underwear, basque, polo or T-shirts.

It has no special attachments—it's easy to understand and operate. It operates continuously, too, by simply using double cones on the stationary bobbin table.

Write for more detailed information on the MERCEDES, a machine of proved performance with average production of 75 to 80 yards per hour on every machine size.

foot-friendly!

Worker-comfort, cleanliness, lasting economy and ease of maintenance, are dividends of this floor of Northern Hard Maple in the Bridgewater, Va., plant of Celanese Corporation of America.



There's a world of thrifty wear in

NORTHERN HARD MAPLE

• When the old-timers laid floors of cheerful, *resilient*, Northern Hard Maple in their mills, they did the whole textile industry a good turn. As these fine old floors stood up year after year, the brush and broom brought their lustre to satin-smoothness. No other floor or floor covering has ever been found to match the way Maple fights abrasion without splintering, offers no lodgement to dirt or lint, resists oil and grease. And maintenance of Maple is *so easy*. "There's always a new floor underneath."

the finest floor that grows

As every inspector knows, *weariness* is the greatest cause of mistakes and slips. Uncomfortable floors make workers weary quickly. Maple floors are "foot-friendly"—they keep folks fit and alert longer. This pays very real profit, year-in, year-out.

For today's TOP buy in flooring, MFMA recommends either Second or Second-and-Better grades. These beautiful, absolutely sound, *economy* grades are now bundled 2 feet and longer as the stock will produce. They save money today, and in the years ahead.

See Sweet's
(Arch. 12K-MA)
•
Write for NEW TEXTBOOK ON FLOORING

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 592, Pure Oil Bldg., 35 East Wacker Drive
CHICAGO 1, ILLINOIS

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

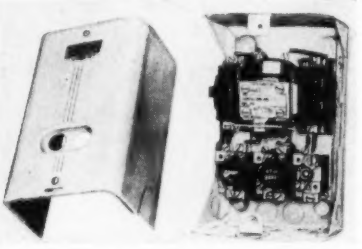
synthetic fibers could assume great stature in wool blends without other applications, and their use probably would result in expansion of the applications and markets for wool.

But wool has a potential competitor in crimped viscose staple. This staple fiber blends with certain wool-like hydrophobic synthetics, and its good dyeing properties can be yielded to them in return for their resiliences and wet tenacity. Furthermore it is low in cost, and a viscose blend with a wool-like hydrophobic fiber might be quite reasonable in price. The possibility of such a union would seem to be the only major threat to wool in apparel fabrics, on the basis of present knowledge.

Textile Equipment News

(Continued from page 156)

Five-Unit Magnetic Starter Is Easy To Maintain



NEW MAGNETIC STARTER manufactured by Cutler-Hammer, Inc., 312 N. 12th St., Milwaukee 1, Wis., incorporates a five-unit construction: two contact blocks, a magnetic coil, an armature, and a three- or two-coil overload relay mounted on a steel panel. Each part can be removed as a unit.

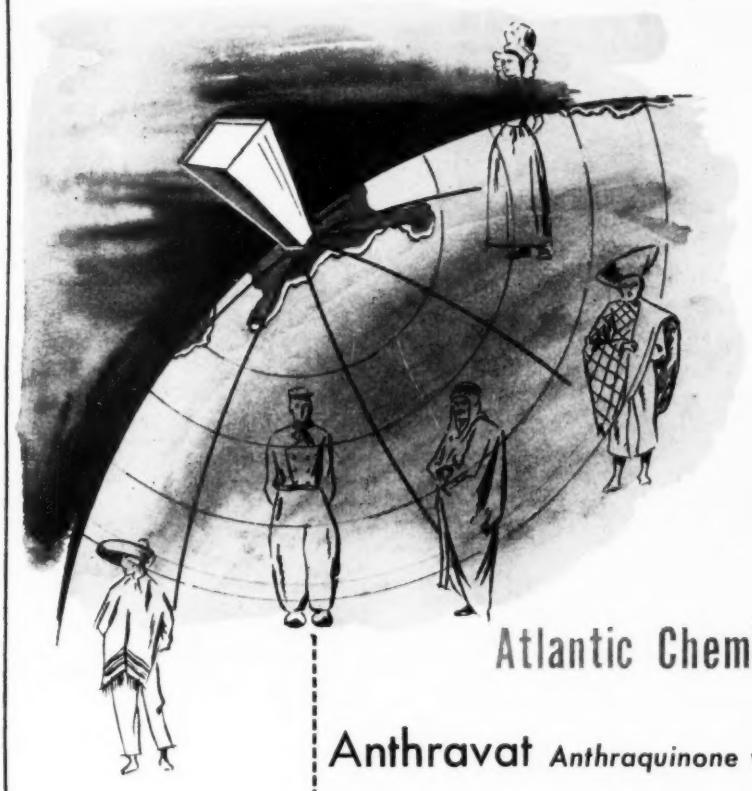
The wrap-around cover pulls off to fully expose the front and both sides of the starter for 180° accessibility. All terminals are angled to face front and have solderless vise-grip connectors.

Circle T-19 on Reader-Service Card

Fog-Generating Machine Mothproofs Wool Stock

An electrically driven indoor unit smaller than its gasoline-driven outdoor applicator has been introduced by Combustion Equipment Div., Todd Shipyards Corp., Elmhurst, Queens, L. I., N. Y. The portable fog generator, when a mothproofing solution is used in its air-pressurized formulation tank and is atomized into the air in the direction desired, will mothproof wool stock, either loose in bins or bound in bales.

Known as the Tifa 15-M unit, the



Manufacturers of Superior Dyestuffs

Atlantic Chemical Corporation

Anthravat *Anthraquinone vat dyes*

Thiovat, Thioprint *Thioindigoid vat dyes*

Printing *Stabilized azoics*

Atlantic Resin Fast *Direct dyes*

Atlantic Direct *Direct dyes*

The greatest names in textiles insist on Atlantic ***quality-controlled*** dyestuffs

Atlantic DYESTUFFS

Atlantic Chemical Corporation

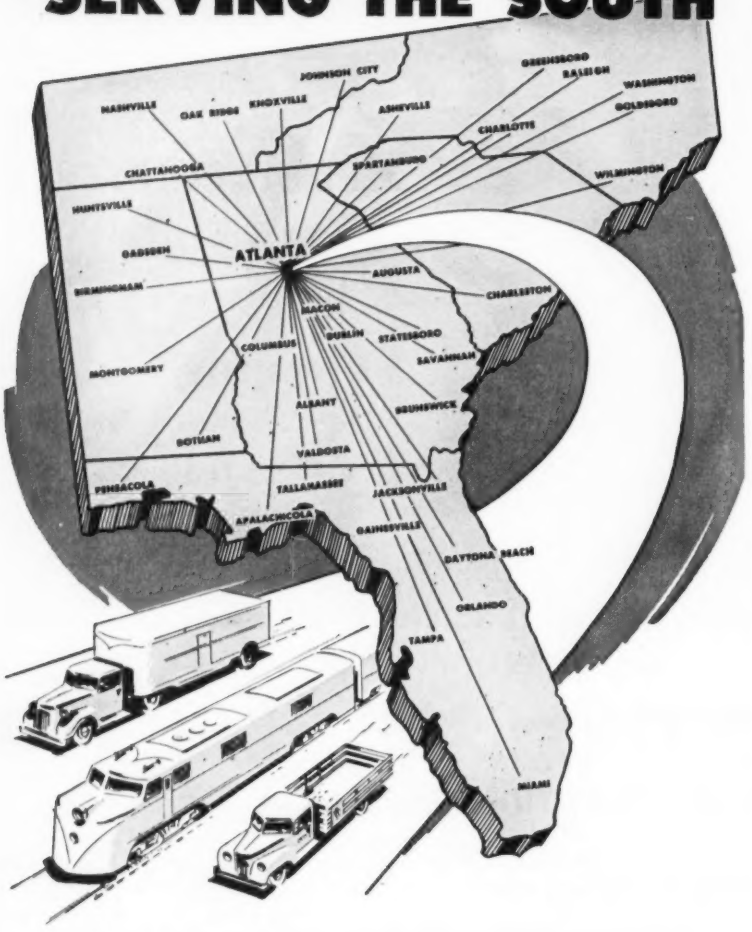
MANUFACTURERS OF COAL-TAR INTERMEDIATES AND DYESTUFFS

Executive Offices: 153 Prospect Street, Passaic, New Jersey

Works and Laboratories: 10 Kingsland Road, Nutley, New Jersey

CABLE ADDRESS. "ANILDYE—PASSAIC"

SERVING THE SOUTH



STEEL IN A HURRY—WAREHOUSE TO YOU

15 main railroad lines and 75 major motor freight lines operating out of Atlanta enable us to make most deliveries of items in stock within 24 to 48 hours—many in less time!

Our new warehouse was constructed with service foremost in mind. Rail sidings come right into the building. Self-leveling docks speed the loading of trucks.

When you want steel in a hurry—a single piece or a car-load—write, wire, or telephone and let us show you why more and more users of steel are depending on our Warehouse Division to meet their needs.

AMERICAN STEEL WAREHOUSE ASSOCIATION — BETTER DISTRIBUTION

Service In Step With Southern Progress

WAREHOUSE DIVISION

Atlantic Steel Company

ATLANTA, GEORGIA · EMERSON 3451

COMBINATION OF MOTHPROOFING solution and very hot air meeting at the fog head (lower right) causes a dry, submicroscopic penetrating fog to be delivered. The fog penetrates right into wool or any other stock in bins or in bales.

apparatus on wheels operates from a 110-v. a.c. outlet. It is safer and easier to operate indoors than the standard gasoline model.

The mothproofing solution is drawn out of its container through a hose by a pump that feeds it into the fog head. There it passes through a mechanical atomizer that breaks the mixture down into a fine spray.

Air drawn from the outside and heated to a high temperature in a special combustion chamber meets the solution at the fog head and pulverizes it into sub-microscopic particles.

Perfectly dry fog can be produced that will not stain yet will penetrate everywhere.

Auxiliaries are driven by a single 1,725-rpm. ¾-hp. motor. Weight of the unit empty is 325 lb. Overall dimensions are 42x21x36 in. Three rubber-tired wheels are standard. Price f.o.b. New York is $1300.

Circle T-20 on Reader-Service Card

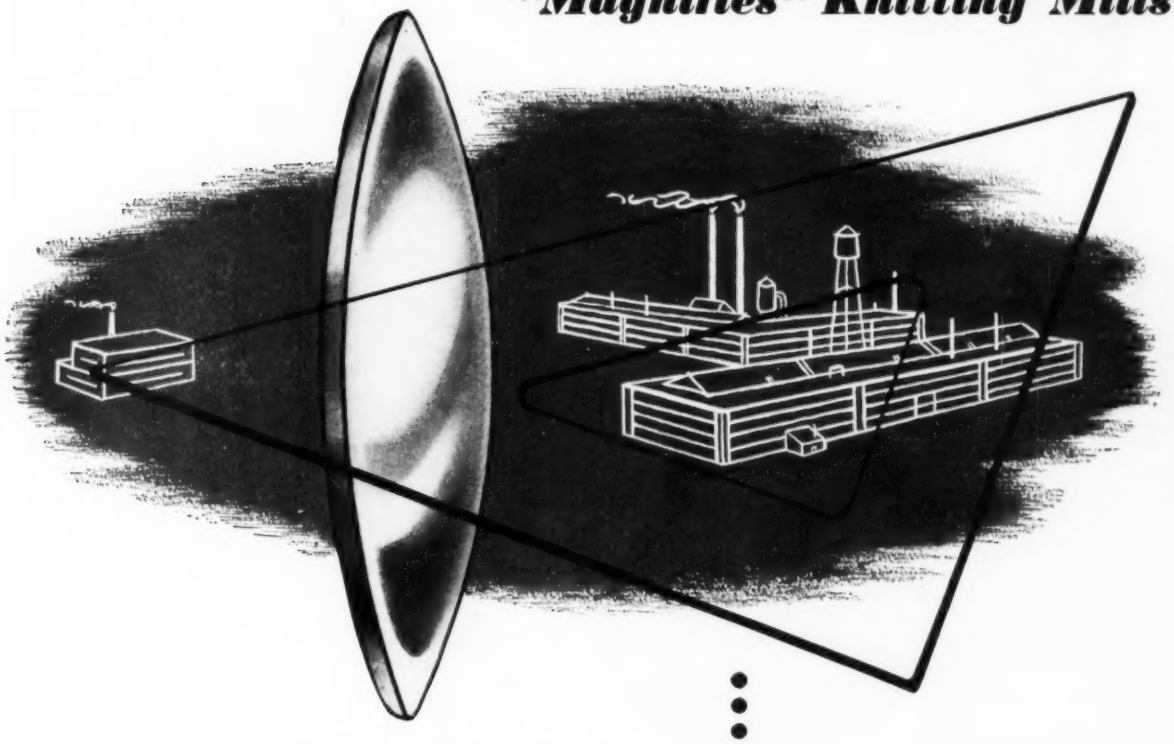
High-Speed Low-Tension Winding of Synthetic Yarns

High-speed winding of the newer synthetic fibers and yarns at "negligible" tensions has been developed in a redesigned winder that is now available from Brugger & Co., Horgen, Switzerland.

The apparent paradox of low tension yet high speed has been obtained speedwise by the introduction of a six-point six-way cam in the spindle box that gives a triple layer-locking at three different traverse points in the building of the bobbin—during the traverse, at the nose, and at the base of the bobbin—to prevent sloughing off. An improved cam-winding motion gives winds up to 30 per in., depend-

HOW SUPREME ENGINEERING

"Magnifies" Knitting Mills



Without adding one inch of actual floor space, Supreme's engineering makes knitting mills bigger in output capacity . . . bigger in production versatility . . . bigger in profit-knitting power.

How? Supreme does this by creating knitting machines that *multiply* a mill's *knitting-ability*.

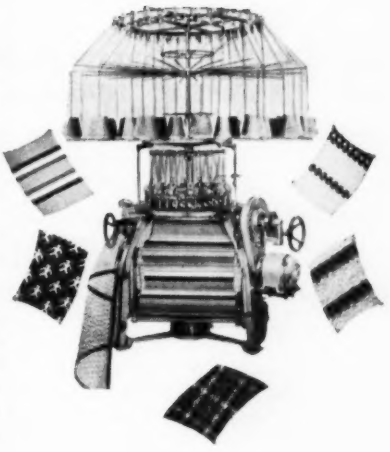
Look into the modern Supreme line. In model after model you'll find multi-machine fabric versatility and production rates that "magnify" a knitting mill in its customers eyes.

You'll also see the basic construction features that assure long-lived, low-maintenance operation. These standardized features give all **Supreme's** a family resemblance that simplifies life for your knitter-mechanics.

Write, wire or phone today for complete information on any of the Supreme's shown on this page.

For more information on how the SUPREME LINE can "magnify" your knitting production, be sure to visit Supreme at Booths #219—236 during the KNITTING ARTS EXHIBITION, ATLANTIC CITY, April 27th through May 1st.

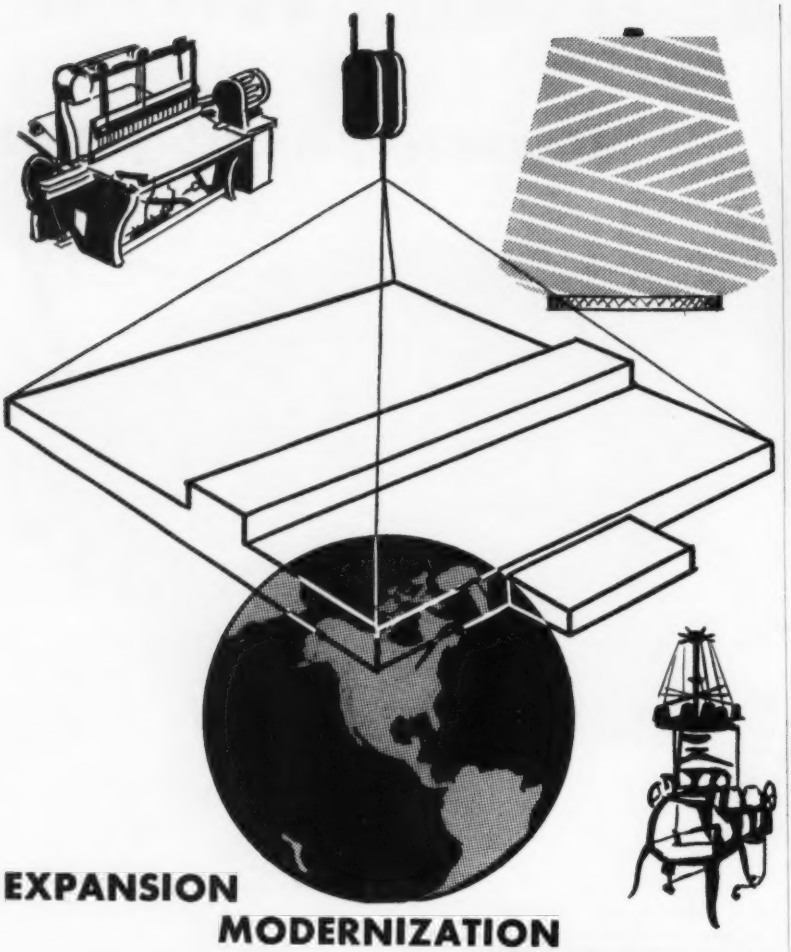
SUPREME
KNITTING MACHINE CO., INC.
107 JOHNSON AVE., BROOKLYN 6, N. Y.
Southern Representative and Showroom:
The Malluck Co., 711 S. Tryon St., Charlotte, N. C.



For example—Here's Model LT/SAAF "A ONE-MACHINE KNITTING MILL"—This automatic variable striper and pattern placer machine knits a tremendous variety of Terry and Jersey fabrics at terrific production rates. Switches easily from one to the other.

SK-162

 For more information, write direct or use Reader Service post card.



EXPANSION
MODERNIZATION
NEW FACILITIES

THE KULJIAN CORPORATION OFFERS THESE SERVICES FOR THE TEXTILE INDUSTRY THROUGHOUT THE WORLD

ENGINEERING Preliminary studies and designs followed by detailed working drawings and specifications. (Services of resident engineer are optional.)

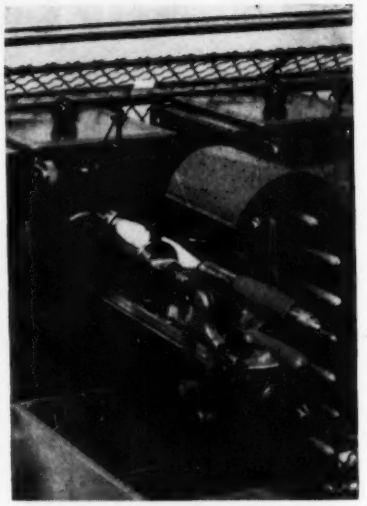
CONSTRUCTION Project management, including coordination of subcontractors and field forces. (Accounting and purchasing services are optional.)

ENGINEERING AND CONSTRUCTION—Undivided responsibility, from preliminary studies to completed construction.

Steam Generation & Utilization
Electrical Generation & Distribution
Water Treatment and Waste Disposal
Spinning, Weaving and Knitting Mills
Finishing Plants
Rayon & Synthetic Fiber Plants

The **Kuljian** *Corporation*

ENGINEERS • CONSTRUCTORS
1200 North Broad Street, Philadelphia 21, Pa.
MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA



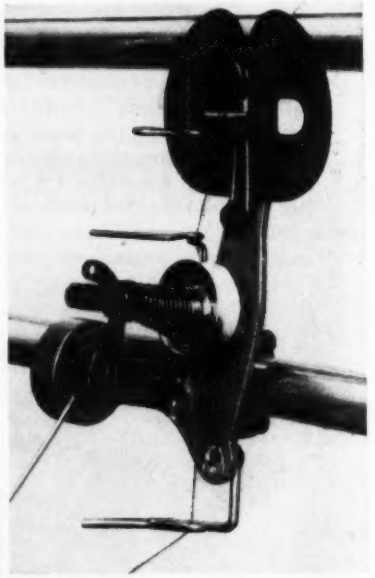
WINDING SPEED of 6,100 RPM. is standard on this new modified Swiss winder designed for winding fine-denier yarns.

ing on the denier, on all types of filling bobbins.

Spindle speed is 6,100 rpm., and in certain cases, 8,000 rpm. Yet the cam makes only 44 rpm. when the spindle is running at 6,100 rpm. The feeler stop motion operates on every third traverse.

Tensionwise, the problem of high speed has been aided by a new compensating tension that applies a tension of 10% or less in grams of the denier being wound.

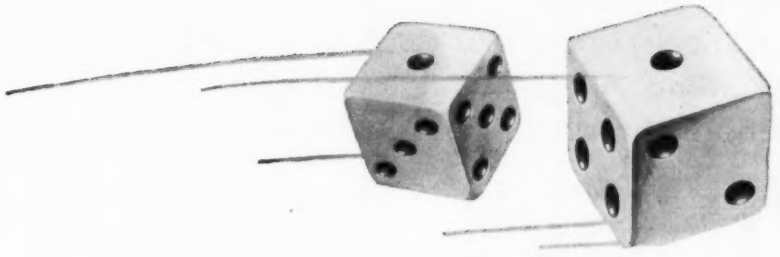
Thus, 15-den. monofilament nylon can be wound 6,100 rpm. with a 30



TEN PERCENT of the yarn denier, in grams, is all the tension this compensator needs to make firm bobbins winding at high speeds.

Don't gamble on your source of supply for

ACETIC ACID



New plant at Pampa, Texas . . . greater production from Bishop now assure continuous large volume supplies of Celanese* Acetic Acid for all industries

Call on Celanese for your Acetic Acid requirements. New or expanded units in Texas and Canada will give your industry a source of supply with the productive capacity and flexibility to meet both present and future demands for Acetic Acid.

Celanese Acetic Acid is produced under controls that guarantee consistently high quality and uniformity. Volume quantities are immediately available for shipment in tankcars, tankwagons or drums, from distribution centers located in major industrial areas. Write for complete technical data, samples, and prices to: Celanese Corporation of America, Chemical Division, Department 571-C, 180 Madison Avenue, New York City 16, New York.

CELANESE ACETIC ACID
GLACIAL U.S.P.

Acetic Acid Content % by wt. min.	99.5
Specific Gravity @ 20/20°C	1.050-1.055
Color	water white
Freezing Point, °C min.	15.6

ACETYL CHEMICALS BY CELANESE
ACETIC ANHYDRIDE
ACETALDEHYDE
ACETIC ACID

Celanese* CHEMICALS

*Reg. U. S. Pat. Off.

STEEL

Every Kind

Some steel products are in short supply but over-all stocks are still large, diversified

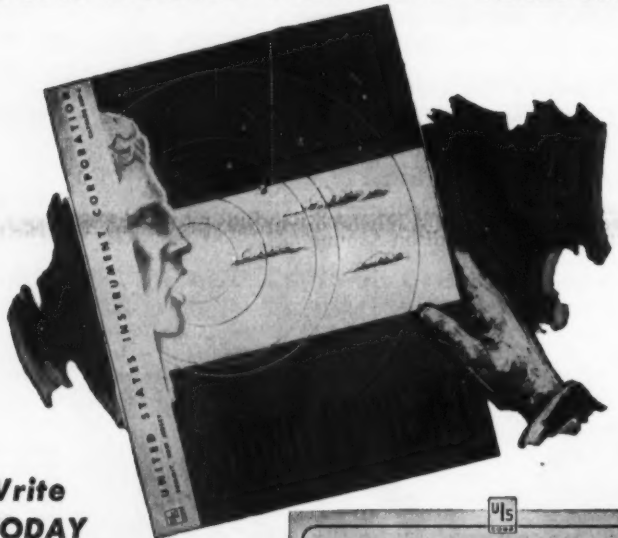
Plates, Structurals, Bars, Sheets, Tubes, etc. . . . Carbon, Alloy and Stainless Steels . . . .

RYERSON

Joseph T. Ryerson & Son, Inc. Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco, Seattle, Spokane.

modernize your communications . . . without batteries

U. S. I. SOUND POWERED TELEPHONES



Write TODAY

FOR THIS CATALOG

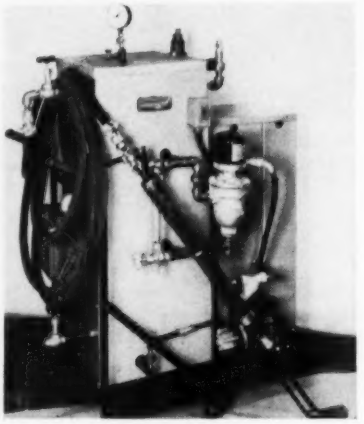
Attention of DEPT. T.

wind at 1.5 grams tension, while 45-den. yarn is wound similarly with slightly more than 4 grams of tension on the compensator. Traverse can be varied from 1 to 2 in.

Tests carried out in Europe are said to give firm bobbins that have no broken filaments, weave well, last longer between transfers on the loom, and give good-quality cloth.

Circle T-21 on Reader-Service Card

Steam-Jet Cleaner Has Automatic Controls



FIVE TIMES AS EFFICIENT as ordinary manpower on machinery-cleaning jobs in a mill, this rapid-cleaning machine is said to pay for itself quickly in labor savings.

A new Standard Speedylectric steam-jet cleaner that was shown for the first time at the recent Plant Maintenance Show in Cleveland features compact portability, fast action, operating simplicity, and freedom from electric fire hazards. It is manufactured by Livingstone Engineering Co., 100 Grove St., Worcester 5, Mass.

The rapid cleaner operates on 220-, 440-, or 550-v. a.c. power. Operation of the steam generator, regulation of detergent flow, and atomization with steam at the jet are all controlled at the operator's fingertips.

Cost of running the unit usually amounts to 40 or 50¢ an hour.

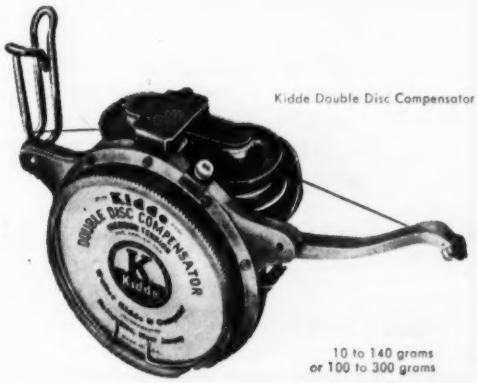
Circle T-22 on Reader-Service Card

Improved Static Detector Is Sensitive 10 Ft. Away

A new static detector for use in textile mills has been developed by Kiethley Instruments, 3868 Carnegie Ave., Cleveland 15, Ohio. Called the Model 2005 and consisting primarily of two concentric telescoping tubes and a center aluminum rod, the unit in position for maximum-sensitivity indica-

how ABBOTT WINDERS are tension controlled at TEXTRON

Textron has about a thousand *Kidde* Double Disc Compensators on their Abbott Winders. Why? Because *Kidde* Double Disc Compensators: 1) Assure uniform tension throughout the quill 2) Control tension at bunch 3) Prevent sloughing off due to soft quills 4) Relieve yarn tension at *start* of bunch, thereby promoting longer quill and washer life 5) Prevent deformed and crushed quills when winding nylon. If you use Abbott Winders on any kind of synthetic yarn (rayon, nylon, Orlon, Dacron (Polyester Fiber) Dynel, etc.) *Kidde* Double Disc Compensators will improve the handling. Write today for full information.



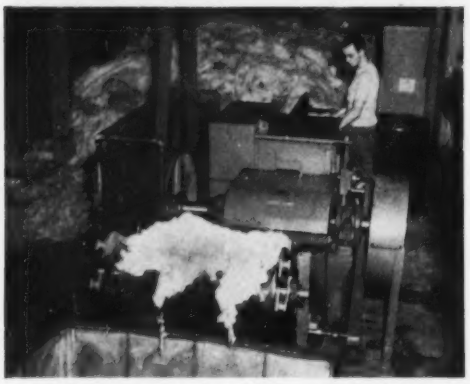
Kidde Double Disc Compensator

10 to 140 grams
or 100 to 300 grams

Kidde

Walter Kidde & Company, Inc.
391 Main Street, Belleville 9, N. J.

 For more information, write direct or use Reader Service post card.



For Better Thread Waste Cutting

TAYLOR-STILES SYNTHETIC YARN CUTTERS—

These machines will cut your synthetic fiber waste as no other equipment will cut it.

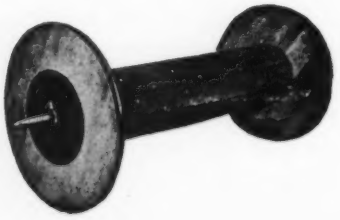
Unique design of cutting element, feed, and speed adjustment mechanism, assure these advantages:

- Fine synthetic filaments can't work into the bearings of the feed rolls.
- Wide spacing of the cutting cylinder knives provide pockets into which the waste can move freely without jamming.
- The feed apron is raised so fibres gravitate toward bed knife. Made for manual or apron feeding. Some models have motor driven feed and discharge. Entire assembly mounted on casters can be pushed back, giving access to knives and feed rolls.

Send for our Thread Waste Folder, No. App. 201, which gives sizes and details and illustrations of the various models of this machine, providing for the differing needs of the many mills that can use them profitably.

TAYLOR, STILES & COMPANY

15 Bridge Street — Riegelsville, New Jersey



SHELL ROLLS	LOOM BEAMS
BLEACHING ROLLS	TEMPLE ROLLS
CLOTH ROLLS	WOOD TOP ROLLS
WHIP ROLLS	TOP WORKMANSHIP
HIGH SPEED WARPER BEAMS	TOP QUALITY TOP DELIVERY

WILLIAM McCASKIE, INC.

Wooden Textile Specialties

FORGE ROAD — WESTPORT, MASS.

CONVENIENT COMBINATION for detecting and locating static charges consists of a new cylindrical static detector (top) that clips onto a standard vacuum-tube Electrometer that has a sensitive indicating dial calibrated in volts.

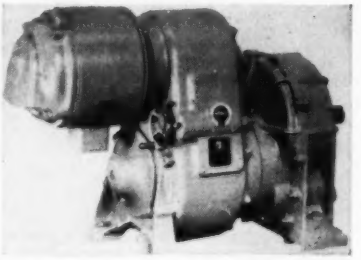
tion will be affected by a charged pocket comb held at a distance of 10 ft.

The instrument is an accessory for the company's standard vacuum-tube Electrometer. When clipped over the HI terminal of the Electrometer, the tube acts as a shield for the rod, and thus sensitivity is limited to a narrow cone along the axis of the two components.

Qualitative results are obtained from the amount of deflection of the meter pointer. Sensitivity of the instrument is varied by extending or lowering the inner tube at the top.

Circle T-23 on Reader-Service Card

New Power Drive Has Wide Variable-Speed Range



VARIATION OF 2:1, 3:1, AND 4:1 in the lower speeds is the main feature of this 20- and 25-hp. Speed-Trol power drive that has been put on the market by Sterling Electric Motors, Inc., 5401 Anaheim-Telegraph Rd., Los Angeles, Calif.

The 20-hp. unit has maximum speeds ranging from 176 to 42 rpm.; the 25-hp. unit, from 176 to 64 rpm. The speed selected is

Can any of these ☑

SOLVAY TECHNICAL BULLETINS

Trade-Mark Reg. U. S. Pat. Off.

help you?

Are you interested in the handling and storage of soda ash? Do you want technical information on caustic soda or liquid chlorine? Or perhaps you're interested in the procedure for the analysis of alkalies. This is just part of the vast store of information that is included in Solvay Technical and Engineering Service Bulletins. And all this extra technical help is yours for the asking.

Throughout American industry, Solvay Technical Bulletins have been accepted as an important source of information on the use and handling of alkalies and associated chemicals. Used in conjunction with your own experience and knowledge, this literature can be a valuable aid in your daily work.

As an important branch of Solvay Technical Service, these bulletins contain authentic information based on actual laboratory research and field service. All material is written by men who are authorities in their respective fields; all the facts are the result of years of experience.

All these Solvay Technical and Engineering Service Bulletins are available free, without any obligation. Fill in and mail the coupon, indicating the bulletins you want.

SOLVAY

SOLVAY PROCESS DIVISION

Allied Chemical & Dye Corporation
61 Broadway, New York 6, N.Y.

Please send me, without cost or obligation, the Solvay Technical and Engineering Service Bulletins I have checked.

- ☐ No. 4—Calcium Chloride in Refrigeration
- ☐ No. 5—Soda Ash
- ☐ No. 6—Caustic Soda
- ☐ No. 7—Liquid Chlorine
- ☐ No. 8—Alkalies and Chlorine in the Treatment of Municipal and Industrial Water
- ☐ No. 9—Analysis of Alkalies
- ☐ No. 11—Water Analysis
- ☐ No. 12—The Analysis of Liquid Chlorine and Bleach
- ☐ No. 14—Chlorine Bleach Solutions
- ☐ No. 16—Calcium Chloride

NAME_____

ORGANIZATION_____

ADDRESS_____

CITY_____ ZONE_____

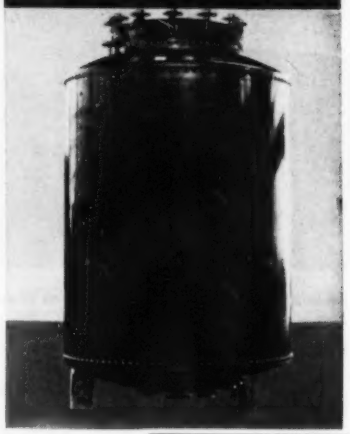
STATE_____ BR-3

For more information, write direct or use Reader Service post card.

SEEN THIS?

New handbook and catalog—yours FREE. For every branch of industry—technicians in design, development, quality control, tooling, production—supervisors, purchasing agents—shows how to select and use industrial magnifiers. Write today: Bausch & Lomb Optical Company, 50115 Bausch St., Rochester 2, New York.

COLE
PRESSURE VESSELS FOR TEXTILE LIQUIDS



• Cole builds vessels to your specifications—dye-vats, kiers, starch-kettles, acid tanks, jib boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with monel metal.

Our long experience in the design and fabrication of vessels for the textile industry may be of help to you.

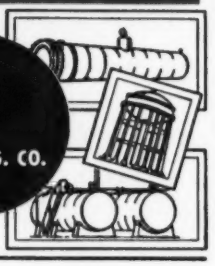
•

Write for latest Cole catalog—"Tank Talk"

Established 1854

R. D. COLE MFG. CO.
NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES



assured by positively adjusted variable-pitch pulleys.

The motors are drip-proof and have direct-through ventilation.

Circle T-24 on Reader-Service Card

Chromium-Plated Front Box Plates Require No Covering

Front box plates for L- and XL-model looms are being finished in chrome plate by Greensboro Loom Reed Co., Inc., Greensboro, N. C.

The box plates are ⅛ in. thicker than conventional box plates to compensate for the lack of covering.

The manufacturer claims that the box fronts will eliminate the cost of covering materials, will reduce jerked-in filling, and will reduce shuttle costs.

Circle T-25 on Reader-Service Card

Quality Program

(*Continued from page 103*)

takes them directly to the weave room. Looms that are making seconds are stopped and checked by the quality man. He decides what is making the seconds and flags the loom for the loomfixer. Since the loomfixer has the cloth-defect ticket and the quality-man's loom report, he has little trouble fixing the loom. Later in the shift the quality man rechecks the loom to be sure the defect has been stopped.

Two of the most common cloth defects are thick and thin places. When a loom makes two rolls of seconds on one of these defects, a special ticket is put on the loom to warn the weaver and loomfixer to give the cloth special attention. When the next roll of cloth is taken from the loom, a part of the warning ticket is torn off and is attached to the cloth. The cloth is then shown to the assistant overseer of weaving, who follows the loom until the defect is eliminated.

Loom Maintenance Helps

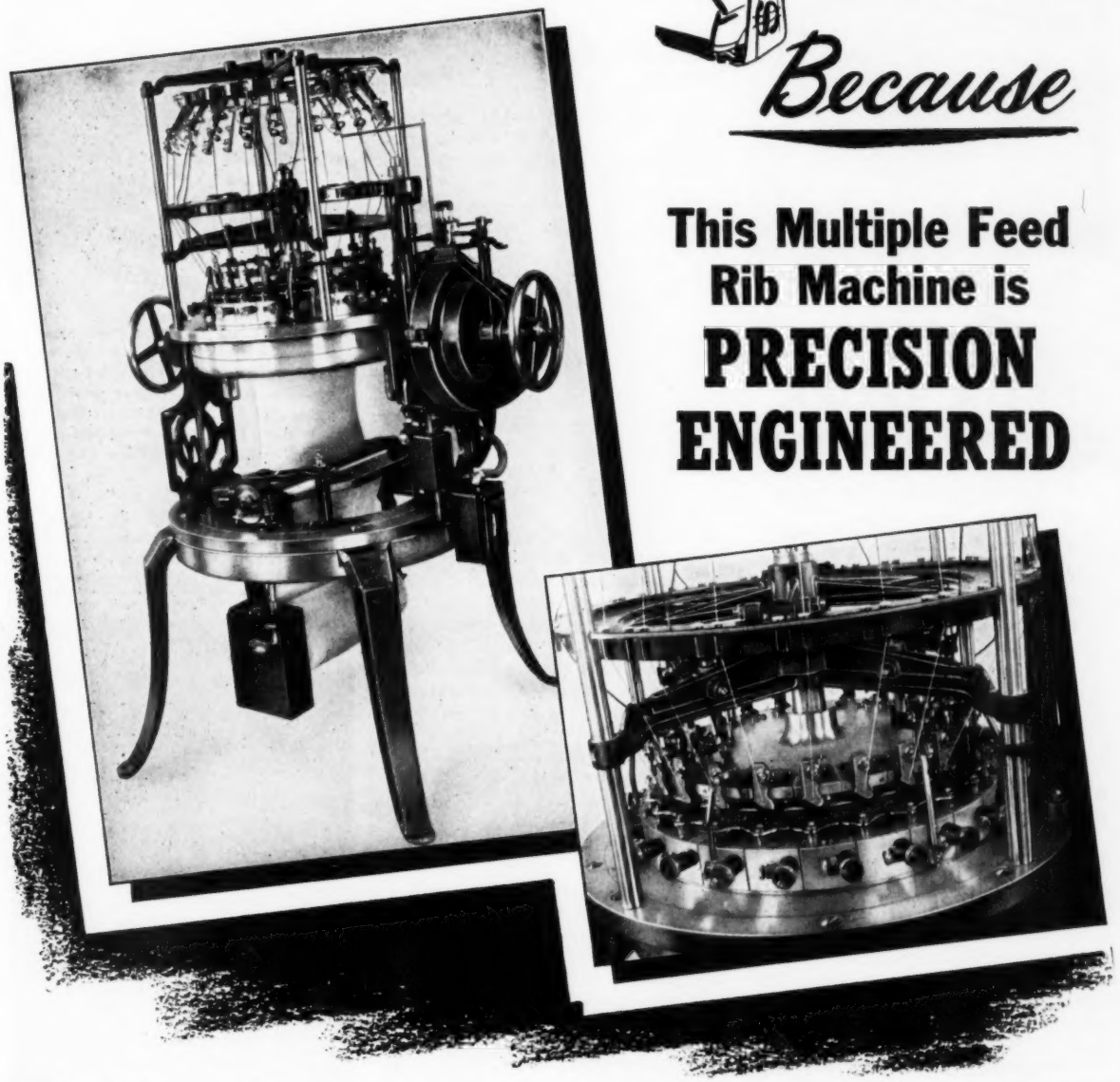
Since the quality man does not have to spend all his time checking seconds, he also makes loom-maintenance checks that prevent seconds just as the quality check reduces them.

Each day the quality man checks a different loom motion. As an example, he checks the shuttle eye, bristle, and groove. Another check includes the box binder, front, and top. The quality man on each shift checks one-third of the looms in the weave room. His work is with three loomfixers. The other quality man on each of the

You Can S-T-R-E-T-C-H Your Dollars Invested Here

Because

This Multiple Feed Rib Machine is PRECISION ENGINEERED



Need adaptable equipment for knitted garments of all types? . . . Then here is your opportunity to maintain diversified pattern designs, better styling, uniform sizes.

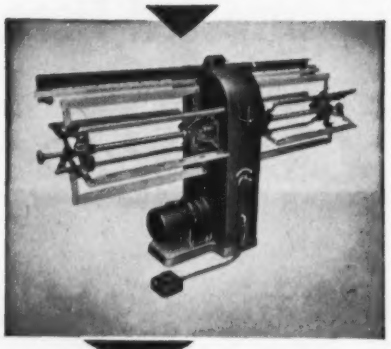
In addition, you get double production for unit floor space with a power increase of only about one-third. And, depth of pattern is greater where a different colored or type of yarn is used in relation to other yarns.

Economical, efficient, versatile – the WILDMAN Multiple Feed Rib Machine.

WILDMAN MANUFACTURING COMPANY

Norristown, Pennsylvania

INCREASE
operator productivity
25% to 100%



Fidelity
SKEIN REELER
offers these improvements

- √ Automatic skein-weight control
- √ Variable speed control
- √ Free-end collapsible reels
- √ Adjustable reel size
- √ Adjustable yarn traverse
- √ Automatic brakemotor
- √ Pedal brake release
- √ Push button start-stop switch
- √ Electric Stop Motions
- √ Enclosed drive, safe, compact
- √ Universal yarn creels

ADVANCED DESIGN BOOSTS ECONOMIES

New design makes this high-speed Fidelity Skein Reeler so easy to run that one operator can handle several machines. Automatic features increase labor productivity 25% to 100%. Space-saving double end (as shown) and single end models available for cotton, nylon, rayon, silk, wool and worsted yarns, tapes, and laboratory uses.

Job-proven in top mills, Fidelity Skein Reelers outperform all others. Get the brochure on this first radical development in reeling machinery in over 40 years, or simplified production charts to analyze your own reeling operation.

Manufacturers of intricate precision machinery since 1911.
FIDELITY MACHINE COMPANY INC.
3912 Frankford Ave., Phila. 24, Pa., U. S. A.

other shifts also checks one-third of the weave room to complete the job.

Duplicate check cards are made, and one of them is given to the second hand of weaving, who has the loomfixer fix motions that are below the weave-room standard. A permanent inspection record is kept on file in the weave-room office.

Overhead Beams Improve Weaving

On 100 looms, 3½-in. overhead beams have replaced the original 24-in. beams that were regularly used on E-model looms.

The looms were overhauled as follows when the overhead beams were added:

1. The loom sides and all the girders were squared.
2. Worn crankshafts, camshafts, and rockershafts were replaced.
3. The picking motions were reconditioned.
4. The lays were realigned.
5. Spreaders were added.
6. All worn loom leathers were replaced.

At first, it was difficult to run the looms because new weaving problems appeared. Among the problems were straightening up the warp when ends were broken and adjusting the let-off.

Now that the weaving difficulties have been eliminated, everyone likes the weaving performance of the looms that have overhead beams better than the looms with conventional beams. More looms will be converted to overhead beams in a future improvement program.

The overhead beams hold 26 cuts of cloth on a given style; and on this same style, the 24-in. beams hold only nine cuts.

Lane's Own Men Are Promoted

While the looms with overhead beams were being overhauled, a training program was installed to train loomfixers. Eleven men did the work under the supervision of the assistant overseer of weaving. Of these 11 men trained, two are now second hands in weaving and four are loomfixers.

Another loomfixer-training course lasts 4 mo. each year. The classes are attended by potential loomfixers and by supervisors of departments other than weaving. Employees attend the classes on their own time before or after their regular shift. The instructors are paid, but the employee trainees are not. The classes develop a lot of good loomfixers.

Since other department heads learn more about looms and weave-room problems, there is now closer cooper-

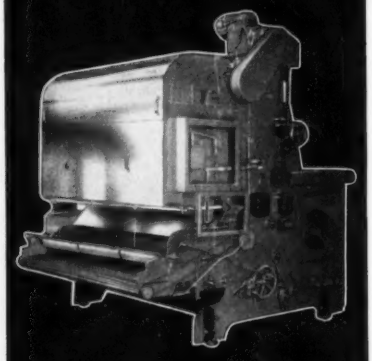
TRAINED CREWS...

make
Kalman
"ABSORPTION PROCESS"
CONCRETE FLOORS
TOUGHER, UNIFORMLY HARDER, LONGER-LASTING

Only Kalman's crews lay Kalman heavy duty concrete floors. These are highly skilled teams, backed by 36 years experience in laying over 250,000,000 square feet of concrete. This "know how" pays dividends in longer floor life and low maintenance!

WRITE FOR FREE BOOKLET!
KALMAN FLOOR CO., INC.
110 East 42nd Street, New York 17, N. Y.
Boston · Charlotte · Chicago · Cleveland · Dayton · Detroit
Houston · Los Angeles · Philadelphia · San Francisco

Geo.S.HARWOOD & Son



SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

DeCetex

the superdurable *Silicone* water repellent for synthetic fabrics

Withstands repeated dry cleaning and laundering. DeCetex is a most durable water repellent finish for synthetic fabrics and blends. Fabrics properly treated with DeCetex retain a spray rating of 100 after 10 or more dry cleanings; 80 to 100 after 3 two-hour launderings.

Resists water-borne stains; improves fabric quality. DeCetex imparts a desirable hand and excellent resistance to water-borne stains. DeCetex treated fabrics seldom show mark-off as a result of the finish. They have superior resistance to wear; improved sewability; increased tear strength; greater stability and crease resistance.

Easily applied with standard finishing equipment. DeCetex is easily applied from a water emulsion and cured at normal resin curing temperatures. No corrosive chemicals are involved; no washing or neutralizing is required and treated fabrics remain odorless even after aging.

For more information on the many advantages offered by DeCetex or for technical assistance, call our nearest branch offices or write for data sheet AJ-3A.

DOW CORNING SILICONES

DOW CORNING CORPORATION MIDLAND, MICHIGAN

Atlanta
Chicago
Cleveland
Dallas
Los Angeles
New York
Washington, D. C.

In Canada: Fiberglas Canada Ltd., Toronto

Great Britain: Midland Silicones Ltd., London

FOAM'S A THIEF...

KILL IT

with Dow Corning ANTIFOAM A

The most versatile and efficient of defoamers, Dow Corning Antifoam A is effective at concentrations in the range of:

- 1 ppm in distilling vegetable oils
- 0.1 ppm in crystallizing sodium bromide
- 3 ppm in textile sizing solutions
- 3 ppm in cooking syrups
- 10 ppm in Geon latex
- 4.5 ppm in yeast fermentation

Dow Corning Antifoam A is odorless, tasteless and physiologically harmless. And it is most economical to use because it is effective in such amazingly low concentrations. Dow Corning Antifoam A can be used as received, dispersed in a solvent or mixed with one of the foaming ingredients.

Dow Corning Antifoam A Emulsion is widely used in the industrial processing of aqueous foamers. Dow Corning Antifoam AF Emulsion is equally effective in aqueous systems and designed for use in the food processing industries.

see for yourself!

mail coupon TODAY for **free sample**

DOW CORNING SILICONES

Dow Corning Corporation
Midland, Mich., Dept. AJ-3.

Please send me data and a free sample of—

- ☐ Dow Corning Antifoam A or
- ☐ Dow Corning Antifoam A Emulsion or
- ☐ Dow Corning Antifoam AF Emulsion

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

STYLERS' PARADISE

No restriction as to size of batch, color, or prompt delivery. Our dyeing does not kill the lustre.

Package dyed acetate yarn, regular and thick & thin—we can supply yarn or commission dye your yarn.

Jobbers of natural rayon and acetate yarns

★

Atlantic Rayon
CORPORATION

Dyers and Converters
of Synthetic Yarns
for All Industries

Plant at Providence 1, R. I.

NEW YORK
REPRESENTATIVE

Empire State Bldg.

Fifth Ave., New York 1

★

ation between all the departments in the mill.

Expanded third-shift operations have placed 10 men from the last loomfixing course on loomfixing or on learner-loomfixing jobs.

Production has been increased, too, by Lane's employee- and machinery-improvement program, but quality is what makes the program successful.

Books of Interest

Fabric-Geometry Techniques Carried Forward

MECHANICS OF ELASTIC PERFORMANCE OF TEXTILE MATERIALS, A Graphic Analysis of Fabric Geometry, by E. V. Painter; Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; mimeographed, 29 pages, $1.

This Report No. 72 in the textile series on Dept. of the Army and Office of the Quartermaster research and development is an outgrowth of a program that studied fiber properties and sought to translate these properties into yarn and fabric structures, and to predict the mechanical performance of woven fabrics.

A graphical technique that was developed during the course of this work provides a relatively simple means of applying the geometrical analyses of fabric structure that were initiated over 15 years ago by Frederick Peirce. Thus much computational work is eliminated.

The graphs supplement and extend the work on the interrelationship of fiber and yarn properties previously published as Reports No. 60 and 62 in this series.

Productivity Report By American Observers

THE BRITISH COTTON INDUSTRY, United States Productivity Team Report, by The British Productivity Council, 21 Tothill St., London S. W. 1, England; or Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C.; paper, 32 pages, 3 shillings or $1.

In this first report by a U. S. productivity team on a foreign textile industry, British cotton manufacturers are chided for complacency with wasteful machines and techniques, for apathy toward improved manufacturing methods that increase production and cut costs, and for a lack of urgency in applying more broadly the increased-productivity techniques that must have been observed when British teams

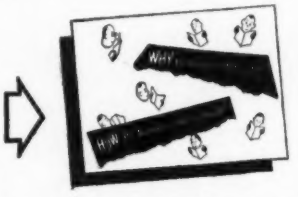
All business is specialized

. . . and nothing specializes on your business like your business paper

This smart business man spends his time where every sitzmark parks a prospect at his feet. He *specializes.* Your business is specialized, too . . . and so is your business paper. It's concentrated on *your* business. Both editorial and ad pages report what's new that's good . . . suggest new methods . . . gather in one place a raft of ideas on where-to-buy-what.

That's help you can't find concentrated into such quick reading time anywhere else! It's simple sense to read every page . . . every issue.

This business paper in your hand has a plus for you, because it's a member of the Associated Business Publications. It's a *paid* circulation paper that must *earn* its readership by its quality . . . And it's one of a leadership group of business papers that work together to add new values, new usefulness, new ways to make the time you give to your business paper still more profitable time.



A copy of this quick-reading, 8-page booklet is yours for the asking. It contains many facts on the benefits derived from your business paper and tips on how to read more profitably. Write for the "WHY and HOW booklet." Room 2710.

McGRAW-HILL PUBLISHING COMPANY
330 W. 42nd St., New York 36, N. Y.

One of a series of ads prepared by
THE ASSOCIATED BUSINESS PUBLICATIONS

Money Back Guarantee!

Sylvania Fluorescent Lamps must outperform all others or your money back!

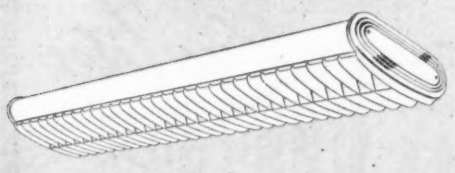
Try 24 Sylvania Fluorescent Lamps of any popular type. If they don't give more light and maintain color and brightness for a longer time than any other brand, send them back with your signed Certificate of Assurance and your money will be refunded.

Remember, Sylvania is a pioneer in fluorescent lighting! Sylvania's modern developments in fluorescent powders and coil coatings now assure the best light and more of it for the longest time. For the full story of "Fluorescent at its Finest" . . . and why we can guarantee it . . . write to Sylvania NOW!

SYLVANIA

Sylvania Electric Products Inc. 1740 Broadway, New York 19, N. Y.

FLUORESCENT LAMPS, FIXTURES, SIGN TUBING, WIRING DEVICES; LIGHT BULBS; RADIO TUBES; TELEVISION PICTURE TUBES; ELECTRONIC PRODUCTS; ELECTRONIC TEST EQUIPMENT; PHOTOLAMPS; TELEVISION SETS



Sylvania *completely* guarantees every fluorescent fixture . . . including every lamp and part for an entire year. For full details see the Sylvania Lighting Contractor who displays this emblem.

QUALIFIED LIGHTING CONTRACTOR AUTHORIZED SYLVANIA SALES SERVICE

Test moisture content *in* 3 *seconds* with Moisture Register!

Model PD-1

Model K-2

You get *accurate*, almost instant, moisture content readings in **wool, cotton, rayon, nylon—practically any type of textile**—when you use Moisture Register Model PD-1 or Model K-2.

Either model gives you "on-the-spot" readings with guaranteed accuracy. They're simple to operate, require no technical knowledge or skill, weigh only 6 pounds, easily portable.

Model PD-1 tests textiles in loose or compressed forms with 3" penetration. Model K-2 tests cones, beams, rolls and similar forms.

ONE YEAR GUARANTEE!

Use one of these instruments **FREE** for 10 days. No obligation! Prove for yourself that Moisture Register will help you maintain higher standards, iron out production headaches, add to your reputation as a manufacturer of quality products. Fill out coupon, mail today!

ELECTRONIC MOISTURE REGISTER

MOISTURE REGISTER CO.
1510 W. Chestnut St.,
Dept. TW, Alhambra, Calif.

☐ Please send me, *without obligation!* for 10-day free trial, Model.....for use on.....

Enclosed find purchase order to cover trial period.

NAME
TITLE
COMPANY
STREET
CITY
STATE

☐ Please send me information on Moisture Register for use on .....

visited the United States several years ago.

The idea behind this frank American appraisal is that Britain must at the same time produce more textiles and get its costs down if it wants to tap the greater market potential that is available at home and abroad in lower fabric-price levels, and to increase the flow of British goods and currency.

What'll Happen When Machines Don't Stop

AUTOMATION, The Advent of the Automatic Factory, by John Diebold; D. Van Nostrand Co., Inc., 250 Fourth Ave., New York 3, N. Y.; cloth, 181 pages, $3.

Scientists have brought electronics far enough along now to usher in what we might call Part II of the Industrial Revolution—automatic production from machines that correct their own mistakes and carry on complex repetitive tasks with as much as and sometimes more skill, common sense, and precision than a human being.

This study covers the possibilities, limitations, and social and economic consequences of such machines and what they will mean in terms of jobs, cost of goods and services, standards of living, and increased leisure time.

Only a few paragraphs discuss the textile industry in particular, and only one example (the automatic versus the semiautomatic loom) is given. The automatic textile plant is still far off. But the author's ideas in a generalized way are intriguing.

Getting Ready To Take It Easy

SOME OBSERVATIONS ON EXECUTIVE RETIREMENT by Harold R. Hall; Graduate School of Business Administration, Harvard University, Soldiers Field, Boston 63, Mass.; cloth, 298 pages, $3.75.

Successful retirement for an executive depends on both financial and activity preparation. Three specific needs must be met to make the transition a successful one:

1. The need for company stimulation of advanced thinking by executives about their retirement.
2. The need to keep "old ties" with the company alive.
3. The need to cultivate several hobbies and nonbusiness activities.

This book presents its case largely on interviews with business administrators and retired executives and so can be used almost as a practical handbook by those of us approaching 65. The recommendations appear valid for both companies and individuals.

Scientific Choosing Of Plant Sites

PLANT LOCATION by Leonard Yaseen; Business Reports, Inc., 225 W. 34th St., New York 1, N. Y.; 195 pages, $12.50.

This book presents graphically the fac-

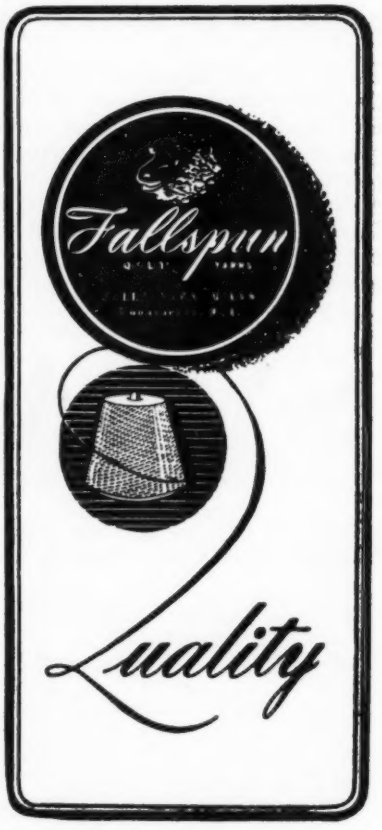
Permalube
SADDLES and NEBS
Wear Longer • Perform Better and Cost Less!

NO OILING IN THIS MILL

One 600,000-spindle mill has been using Whitehead Permalube Saddles and Nebs for two years on *hardened-steel* rolls. Ends down have been reduced from 30 to 15. Frames are cleaned only once in several weeks, instead of twice daily. And oiling costs have been completely eliminated. Whitehead Permalube Saddles and Nebs can do the same for you. Write for complete information.

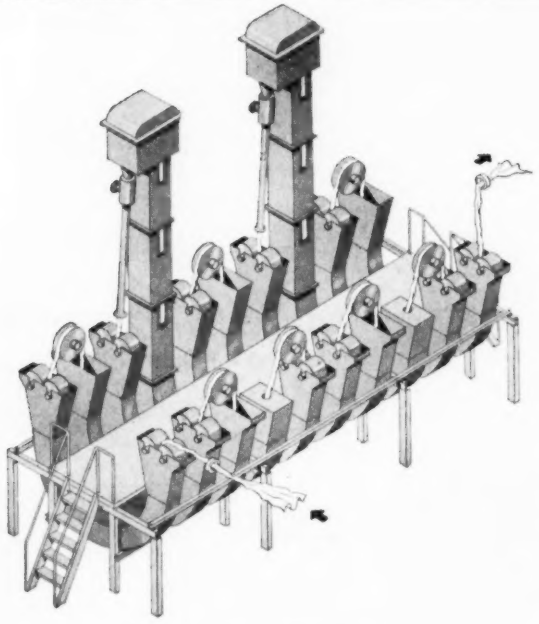
Coleman Co., Box 3597, Greenville, S.C.
Roy Schrimshire, Box 906, Columbus, Ga.
Matthews Equip. Co., 93A Brdwy., Prov., R. I.
Don O'Hair, Box 8254, Charlotte 8, N.C.

WHITEHEAD ENGINEERING CO.
522 WEST PEACHTREE STREET, N. W.
ATLANTA 3, GEORGIA



NOW..."BIG MILL" EFFICIENCY FOR MILLS OF SMALLER CAPACITY

DU PONT TYPE 1000 CONTINUOUS PEROXIDE BLEACHING SYSTEM



SPECIFICATIONS:

CAPACITY
..... 750 to 1500 lbs. hr.

SPEED
..... to 100 yards minute
(Handles goods in the 3-7 yds. lb. class)

OVER-ALL DIMENSIONS
..... Length 33 ft.; Width 14 ft.; Height 24 ft.

DU PONT PEROXIDES
FOR TEXTILE BLEACHING

Available in drums and tank cars { **"Albone" 35 . . . Hydrogen Peroxide, 35%** / **"Albone" 50 . . . Hydrogen Peroxide, 50%**

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

New unit lowers costs . . . increases uniformity . . . improves quality

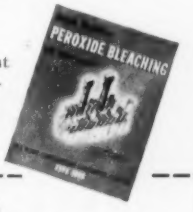
With the Du Pont Type 1000 system, all the advantages of full-scale continuous bleaching ranges are made available to smaller finishing plants. This compact two-stage system has a capacity of 750 to 1500 lbs. per hour . . . produces finished goods of high uniformity and quality. Automatic operation permits close control of chemicals and steam—frequently resulting in savings up to 40%.

Like all Du Pont Continuous Bleaching Systems, the Type 1000 is simple in design and construction . . . can be installed and operated at surprisingly low cost. Even at top speed—100 yds. min.—operation is easily supervised by one man. Such economies, together with the increased production made possible, usually pay for the unit within two years.

Small mills find the Type 1000 system ideal for full production requirements. Large mills use it as an auxiliary unit for specialty bleaching. Whatever the size of your mill, it will pay you to investigate this new continuous bleaching system and the many advantages it offers. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

NOTE: The equipment illustrated, which can be used in the Type 1000 System, is designed and sold by H. W. Butterworth & Sons Co., Bethayres, Pa. Other manufacturers also supply equipment for this system.

FREE BOOKLET
gives you complete information about the Type 1000 system . . . describes advantages, applications, steps of operation and equipment design. Send in the coupon below for your copy.



E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Delaware

Please send me your new free booklet which completely describes the new Du Pont Type 1000 Bleaching System.

*Name*_____ *Position*_____

*Firm*_____

*Street & No.*_____

*City*_____ *State*_____

AT YOUR SERVICE

SPECIALIZED ENGINEERING

SPECIALIZED EXPERIENCE

SPECIALIZED MACHINERY FOR TWISTING BUNCHING STRANDING FORMING AND LAYING IN THE TEXTILE • WIRE CORDAGE AND MANY OTHER INDUSTRIES

WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES MACHINE CO., INC.

2231 E. ONTARIO ST.
PHILADELPHIA 34
PA.

tors that influence the scientific location of new plant facilities in an era of rapid population shifts, a rising birth rate, changing age brackets, increased skills, mounting costs, advanced training, and decentralization.

The objective is the scientific determination of the one best community that offers the greatest competitive advantage for a particular manufacturing operation. Specific advantages must be sought, not general ones.

This is a big 8½x11-in. presentation of almost 200 pages and includes four-color, specially prepared illustrations.

Dyestuff Manufacture And Its Application

THE CHEMISTRY OF SYNTHETIC DYES, Vol. II, by K. Venkataraman; Academic Press, Inc., 125 E. 23rd St., New York 10, N. Y.; cloth, 1,442 pages, $15.

The second half of the author's two-volume compilation of information pertinent to the manufacture and use of synthetic dyes includes further data on the chemistry of intermediates and dyes, the application of dyes, the relation of color and its chemical constitution, the action of light on dyes, and the chemical constitution of dyes in relation to their affinity for textile fibers.

A brief review of Volume I of this work appeared on page 207 of the April, 1952, issue of TEXTILE WORLD.

Mill Maintenance

Keep Your Antifriction Bearings and Shafts Clean

It isn't enough just to keep your antifriction bearings clean—you have to keep the shafts clean too. If you do a good job of cleaning bearings and then replace them on the same dirty shaft, the bearings will soon become contaminated again, and you'll have bearing failures.

The Antifriction Bearing Distributors Assn. tells how to clean bearings and shafts.

Soak Bearings in a Solvent

Place the bearings in a small tank equipped with a wire basket. Use a nonflammable solvent. It is better to use a safety solvent intended for bearings cleaning only. Let the bearings soak in the solvent for several hours, if necessary, to loosen the grease and dirt.

Where scale or hardened dirt have

CLORPACTIN CXW

STRIPS COLORS QUICKLY . . . YET FABRICS RETAIN MAXIMUM TENSILE STRENGTH!

A revolutionary new bleaching and stripping agent which

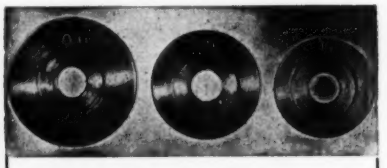
- ACTS RAPIDLY
- IS EFFECTIVE IN LOW CONCENTRATIONS
- IS NON-TOXIC

A request on your company letterhead will bring you a copy of new Technical Bulletin describing CLORPACTIN CXW for Bleaching and Color Stripping.

GUARDIAN CHEMICAL CORPORATION

10-15 43rd Ave., Long Island City, N. Y.

*Registered Trade Mark of The Guardian Chemical Corporation identifying its modified, buffered hypochlorous acid compositions.



Wayne Traverse Wheels for use on your Universal No. 90 winders, made of *hardened tool steel* cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

Ask for sample and prices

WAYNE MFG. CO.
HONESDALE, PA.

What's U. S. Rubber doing with spooler sleeves?

Making them of Uscolite, the rubber plastic. This minimizes creel breaks on the warper, thereby preventing wild yarn and knots from occurring in the twister beams and slasher beams, saving time and work.

This remarkable material is exceptionally long-lived and has excellent resistance to chipping around the edges. Uscolite Spooler sleeves are available in both Type A and Type C sizes for Barber Colman spoolers—in 3 colors—blue, gray, brown.

U. S. Rubber's line of textile mill specialties is the largest and most extensive in the industry. The use of these textile specialties *reduces* cost, *increases* product quality. Write for full information without delay to address below.

PRODUCT OF U.S.RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

GOODBYE TO "SUPPLY TROUBLES"

Enlarged plant insures you immediate delivery of

VINOL polyvinyl alcohol

Are you a user of Polyvinyl Alcohol? You can be sure of an adequate supply—now possible through the enlarged facilities of The Colton Chemical Company, exclusive producers of VINOL Polyvinyl Alcohol. Uniformity and high quality of VINOL Polyvinyl Alcohol are rigidly controlled. You can depend on VINOL.

VINOL Polyvinyl Alcohol is extensively used in the Adhesive, Textile, Paper and Packaging Industries. VINOL is non-gelling, white, free-flowing, fast-dissolving and uniform.

SPECIFICATIONS

VINOL Polyvinyl Alcohol is available in two grades:

	FH-400 (medium grade, fully hydrolyzed)	FH-500 (high viscosity, fully hydrolyzed)
Hydrolysis	98.5—100%	98.5—100%
Insolubles (in water)	1.0% max.	1.0% max.
Volatiles	5.0% max.	5.0% max.
Ash	2.0% max.	2.0% max.
pH	6 - 8	6 - 8
Viscosity (4% in water)	20 - 30 cps	35 - 50 cps
Gel characteristics	Non-Gel	Non-Gel
Color	White	White

THE MARK OF QUALITY

For samples and information, write Dept. 333

THE COLTON CHEMICAL CO.
1545 E. 18TH ST. CLEVELAND 14, OHIO

Manufacturers of VINOL Polyvinyl Alcohol—VINAC Polyvinyl Acetate in Solid, Solution and Emulsion Form—Phenol Formaldehyde Solutions

formed, use a short, clean bristle brush to remove the deposits.

After the bearings are thoroughly soaked in the cleaning fluid, slosh them around near the top of the container and give them a couple of turns to work out the dirt. Then rinse them in a clean container filled with clean solvent.

Dry Bearings With Air

Use compressed air to dry the bearings if you want to—but do not spin the bearings by the force of air. If the bearings are spun, a few dry particles of dirt, which may have been left between the moving elements, will often scratch the surfaces instead of being blown out.

Bearings can be dried with clean cloths, but don't wipe them with cotton waste or dirty cloths.

Cleaned bearings must be handled on clean workbenches.

Inspect the cleaned bearings for defects, lubricate them, and return them to the machines.

Don't Wash Sealed Bearings

Bearings with a seal or shield on only one side should be washed, inspected, and handled in the same manner as bearings without seals or shields. Bearings with removable seals should be washed and inspected after the seals are removed.

On the other hand, don't wash bearings with seals or shields on both sides. Wipe them off to keep dirt from working inside. If they stick or feel too rough for further use, send them to shops where shield-bearing cleaning and lubricating equipment is available.

Smooth-turning bearings of the double-seal type can be coated with a protective lubricant.

Prepare Stored Bearings

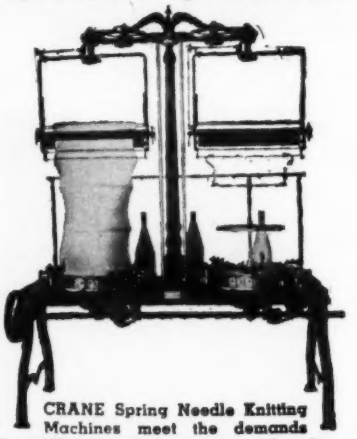
Inspected bearings of the unsealed type that cannot be reassembled in the equipment the same day should be dipped in a rust preventive and stored overnight in a tightly covered pan.

If the bearings are to be stored for more than a few days, dip them in a protective lubricant or coat all surfaces with a light grease. While they're still in the grease, rotate them to work the grease thoroughly around the rolling members and on the raceways. Wrap the bearings in greaseproof paper and place them in a clean box.

Clean the Bearing Shafts

Use the same cleaning fluid you use to clean bearings to clean the shafts for the bearings. Use the same bearing-cleaning methods and care on the

1870 CRANE 1953
SPRING NEEDLE KNITTING MACHINES
Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE
MANUFACTURING CO.
LAKEPORT, N. H.

WORLD'S FINEST IN-STOCK
INDUSTRIAL ELECTRONICS
PARTS CATALOG

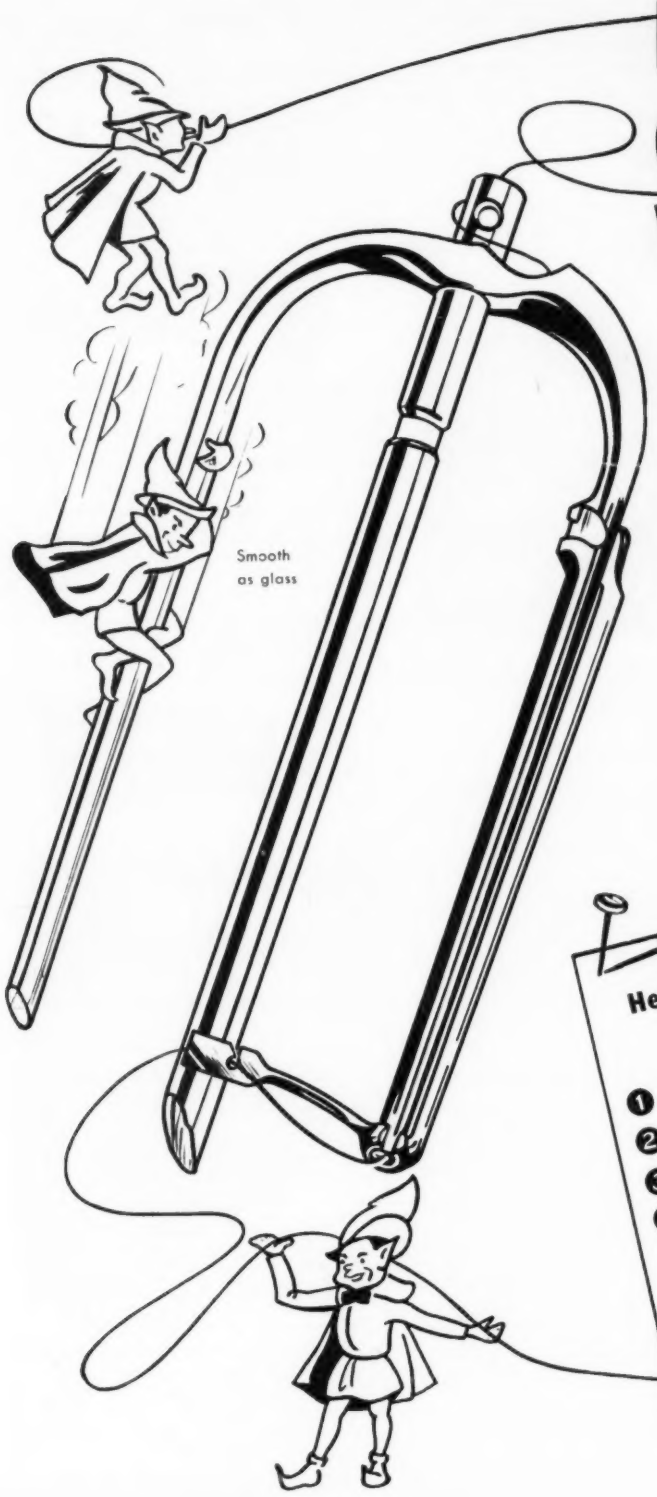
NEW 200-PAGE 1953 EDITION JUST PUBLISHED!

SENT FREE

Write on your company letterhead. Radio Shack's catalog is COMPLETE from AMPEX to ZEPHYR. Over 15,000 listings of components and equipment, plus details, pictures, lowest net prices. Separate indexing of products and manufacturers. Full JAN data! The preferred buying and reference guide for P.A.'s, engineers, designers, schools, civil defense, government, service agencies. *For your FREE copy, write TODAY to Department W*

RADIO SHACK
CORPORATION
167 Washington St., Boston 8, Mass.

Ideal Goldflyers* Won't Choke Up



Your troubles from choked hollow legs are over when you use Ideal Goldflyers. Fibres can't hang up on their beautiful smooth-as-glass finish. Flyer legs can't choke up to cause slubs or roving doublings. Ideal's Goldflyer finish is baked on and is guaranteed never to flake off or wear to a rough surface.

Ideal's Goldflyer finish is an addition to Ideal's matchless repair service. Specify it on your next repair (or reconditioning) order and you will get super-smooth running work and better quality roving.

Here's the Full Ideal Repair Service

1. Straightening noses
2. Gauging slots
3. Blocking flyers and pressers
4. Rebuilding worn parts of flyers to factory specifications
5. Heat tempering flyers to give extra rigidity
6. Selecto-speed** balancing for your operating speed
7. Plus super-smooth Goldflyer finish. RCK (Black), or Rayon(Bright) finishes optional.

Write, call, or wire for full information.

**Patented
*Trade Name

Ideal Machine Shops, Inc.

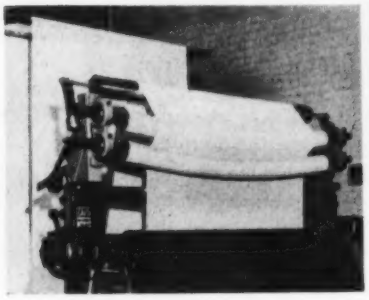
Bessemer City, N. C.

29th Year of Continuous Service to Textile Mills

HERMAS SHEARS

can now be supplied with—

MT. HOPE EXPANDER



With some types of cloth, made from cotton or synthetic fiber, slack selvages permit the fabric to wrinkle or fold as it is fed into the shear.

The result may be permanent creasing, or damage to the fibers where folds are formed.

Mount Hope Slack Selvage Eliminator

can now be supplied, mounted on the Hermas 4-knife AV shear. It takes up slack selvages and assures evenly spread cloths at the shear feed and smoothly wound rolls.

If desired, this appliance may be installed on new Hermas AV shears at our factory.

HERMAS MACHINE COMPANY

Specialists in

Clothroom Equipment

HAWTHORNE NEW JERSEY

shafts that you use on the bearings.

Often, the shafts can't be removed from the machine easily and must be cleaned at the machine. Then the entire area around the shaft and bearing should be cleaned before the bearing is replaced.

In bearing applications where section beams or loom beams are used, the beam journals should be cleaned before the beams are placed in the machines.

Useful Accessories For Textile Mills

▶ To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.

Automatic Conveyor for Air Press

An automatic conveyor that connects a standard air press to an automatic operation is available from Utica Novelty & Mill Specialty Co., 2145 Dwyer Ave., Utica 2, N. Y. The conveyor does away with the operator of the press and is said to do a high-class job of pressing on any type of garment at a uniform rate of production. The distance the belt travels after being loaded is synchronized with the length of pressing so that every garment is pressed once for a predetermined length of time. (U-1)

Concrete-Floor Hardener

"Flintcrust Liquid" is a flush-on case-hardening preparation that adds years to the life of a concrete floor, according to the manufacturer, Flexrock Co., 3600 Filbert St., Philadelphia 4, Pa. Successfully used on floors that receive rough traffic, the preparation is said to end sanding, dusting, and the usual break-up of the floor that follows continued heavy wear. The product is easy to apply, as it is flushed on just like water, does its job immediately, and need not interrupt traffic. It makes the floor resistant also to the penetration of acid, grease, oil, and water. (U-2)

Device Solves Flow Problems

Accurate measurement of flow of liquids and gas under difficult conditions is made possible by the development of a new, improved flowmeter by Minneapolis-Honeywell Regulator Co., Industrial Div., 4494 Wayne Ave., Philadelphia 44, Pa. The new unit is capable of handling toxic or highly corrosive substances, viscous liquids, or other fluids, under pressures up to 20,000 psi. and temperatures ranging

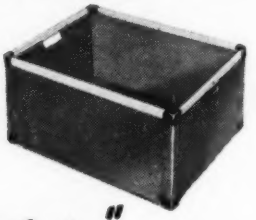
better scouring . . . lower cost

Metso® Detergent helps your soap and synthetic detergents to remove more soil—no oily film left on the wash water to re-deposit on the cloth when removed from the bath. Save also with Metso because you use less of the more expensive soap and synthetics. Write for sample and price on 100 lb. bags.

Philadelphia Quartz Company
1139 Public Ledger Building
Philadelphia 6, Pa.

PQ Metso Detergents
PQ SILICATES OF SODA

tough babies



"Fedco" MILL BOXES

Expertly built of superior grade hard vulcanized fibre, combining light weight with extreme durability. Straight or tapered . . . your BEST for storing, sorting, assembling and toting. Write for details.

Also ask about our Box Trucks, Barrels and Baskets

Federal FIBRE CORP.
Dept. 55
3704 Tenth Street,
Long Island City 1, N. Y.
RAvenswood 9-2860-1

C-O-TWO

TRADE MARK

REG. U.S. PAT. OFF.

FIRE EXTINGUISHERS

give fast, positive fire protection

● Top quality backed by experienced engineering results in operating superiority at all times with the world famous C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers as well as the newer C-O-TWO Dry Chemical Type Fire Extinguishers. Furthermore, modern manufacturing facilities and extensive field testing, together with approvals such as the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus assure you of fast, positive action the instant fire strikes.

CARBON DIOXIDE TYPE

With C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting inert gas . . . smothers fire in seconds, leaves no after fire mess . . . highly effective on flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. The C-O-TWO Squeez-Grip Valve is the greatest single contribution to the releasing of carbon dioxide for first aid fire fighting . . . just squeeze lever to open . . . release to close.

Convenient 2½, 5, 10, 15 and 20 pound hand sizes . . . discharge horn non-conducting, shatterproof construction. Also, convenient 50, 75 and 100 pound wheeled sizes . . . available with sturdy, wide-faced wheels either with or without rubber tires, as well as available with or without discharge hose and horn protection cover.

DRY CHEMICAL TYPE

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly . . . exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials. The exclusive inverting design renders constant free flowing dry chemical, assuring faster, more effective and complete discharge.

Convenient 4, 20 and 30 pound hand sizes . . . no syphon tubes or valves within the cylinder to become clogged or inoperative . . . discharge hose and squeeze type discharge nozzle remain empty until actuation takes place . . . one piece removable top assembly. Also, convenient 150 pound wheeled size . . . sturdy, wide-faced wheels . . . discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing . . . footrail and dual bar handle provide easy inverting.

Act now for complete free information on these fast, positive fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

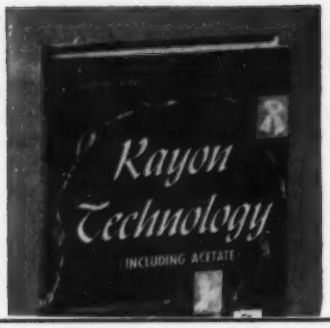
Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY

C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY



How to process RAYON and ACETATE
on standard mill machines

From wide experience in using and processing rayon on different types of machinery and equipment comes this handbook on methods, pointers, and suggestions. A compilation from many of the outstanding technicians in the textile industry, this book tells exactly how to use rayon and acetate on present or available equipment, bringing you, in the Second Edition, the improved techniques and methods. It describes advanced but accepted practices in all divisions of the industry—cotton, woolen, worsted, synthetic, knitting, finishing. Covering the spinning of rayon staple by the three principal systems, and throwing, weaving, knitting, dyeing, and finishing—all phases of textile manufacture—it shows the profitable ways to process rayon and acetate into yarn, gray goods, and finished fabrics.

Second Edition—Just Published!

RAYON TECHNOLOGY (INCLUDING ACETATE)
Handbook for Textile Mills

Prepared by the
Textile Research Department of
AMERICAN VISCOSE CORPORATION

335 pages, 6 x 9, 108 diagrams and photos, 57 tables, $7.00

McGRAW-HILL SERIES IN TEXTILE TECHNOLOGY

THIS BOOK shows how rayon and acetate can be used on equipment designed to handle natural fibers, as well as on the increasing quantity of equipment being made available especially for handling staple or continuous-filament rayon. Each chapter considers actual working conditions, how best to use equipment, the specific problems likely to arise in using rayon staple, and practical methods of solving them.

Here is a wealth of information on rayon staple as used in cotton, worsted, woolen, synthetic, knitting, and finishing mills and on the special equipment of each. This handbook describes winding, throwing, warping, slashing, quilling, and weaving operations . . . It discusses the structure of rayon fabrics, both those made of continuous filaments, and those made of continuous filaments supplemented by spun yarns.

Second Edition even better than First, with new material on:

- Industrial applications for rayon: in such varied products as garden hose, conveyor belts, laminated plastics, suitcases, heavy-duty paper. Tells what fiber properties make rayon desirable for many uses; discusses Vinyon H and its applications.
- Requirements and functions of chemicals.
- Machinery, equipment, and details for processing rayon (including acetate).
- Current methods and machinery for fiber blending.
- New fabric constructions, both woven and knitted.

SEE THIS BOOK 10 DAYS FREE

McGraw-Hill Book Co., 330 W. 42nd St., NYC 36

Send me a copy of American Viscose Corporation's RAYON TECHNOLOGY (INCLUDING ACETATE), 2nd Ed., for ten days' examination on approval. In 10 days I will send $7.00, plus a few cents for delivery, or return the book postpaid. (We pay for delivery if you remit with this coupon; same return privilege.)

(Print)
Name .....
Address .....
City ..... Zone.... State.....
Company .....
Position TW-3

This offer applies to U. S. only

from —269° C. to 1,200° F. The device is being marketed as the Potter-Brown Flowmeter. The instrument can be used for laboratory work as well as for industrial-flow and automatic-control applications. (U-3)

Filter-Plant Control System

A reduction in installation and maintenance costs, plus greater operating convenience, are said to feature the new rapid sand-filter control instrumentation that has been engineered by The Foxboro Co., Foxboro, Mass. The system is said to be the first to use a completely integrated pneumatic transmission and control that eliminates service problems characteristic of mechanical-control methods. Since no pulleys, cables, shafts, or water pilots are necessary, one operator, working from a centrally located operating table, maintains precise filter control. A four-position operation selector switch can be set for filtering, draining, backwashing, or bypassing effluent to waste.

Filtration rate is indicated by a rate-of-flow controller, with rate changes easily made with an adjustable controller setting index. (U-4)

"Giant Brain" for $62,500

A new "giant brain" that has a controlled memory capacity of 102,400 nine-digit "words" and the ability to solve a 10-digit mathematical problem in 3 milliseconds is commercially available from Electronic Computer Corp., 160 Avenue of the Americas, New York, N. Y. The Elecom 100, as it is called, is the first comparatively low-cost, general-purpose, electronic computer of its type to be offered on the market.

Relatively small in size compared to the older room-sized computers that cost several million dollars, it sells for $62,500. Designed for use in industrial research laboratories, it is expected to save thousands of dollars and countless hours of time in the computation of complex technical problems.

The new computer consists of three units: a conventional-type office desk at which the operator sits, a metal drum "memory" unit the shape of a water cooler, and the computer proper that is housed in five steel cabinets joined together in a semi-circle. It operates on standard 120-v. a.c. and can be easily moved about as the units are mounted on casters. (U-5)

Improved Air Transformer

Users of compressed air will welcome the "HLD" air transformer that has been introduced by DeVilbiss Co., Phillips Ave., Toledo, Ohio, described as being more efficient, easier to operate, of sturdier construction and of greater capacity than previous units.

The transformer has a built-in two-stage regulating principle that provides for easier adjustment of pressures and requires only finger-tip control of the adjusting knob. The knob actuates a small pilot regulator that in turn operates the diaphragm of the large regulator. The two-stage regulator also provides for closeness of pressure regulation and low pressure loss. Oil and moisture, present in compressed air lines, are eliminated by the new transformer,

IT'S WHAT IS IN THE DRUM THAT MAKES THE DIFFERENCE

FOR SOFTENING PROBLEMS

USE

SYNTHOSOFT

The New Type Cationic on all Synthetics as well as Cotton and Wool

NON-YELLOWING

BETTER HAND

So. Offices:
309 Volunteer Bldg., Chattanooga, Tenn.
205 Church St., Charlotte, N. C.

RICHMOND OIL, SOAP AND CHEMICAL COMPANY INC.

Export Agents
HOWARD G. GODFREY AND CO., INC.
456 Fourth Ave.
N. Y. 16, N. Y.
Cable Address
Godfreyara

Reminder to the KNITTING TRADE

Plan to Attend the 41st

KNITTING ARTS EXHIBITION

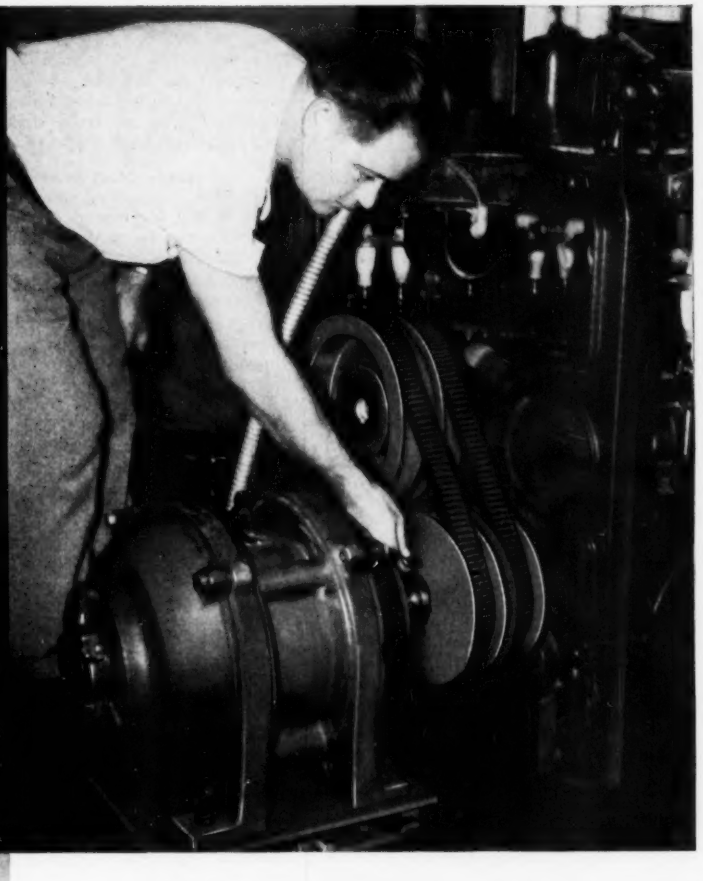
April 27 thru May 1 1953

Atlantic City Auditorium
Atlantic City, N. J.

NEW Spinning Frame Drive

CUTS DOWN-TIME ON SPEED CHANGES!

INCREASES PRODUCTION!



ALL of the exclusive advantages of the famous Dodge Taper-Lock design are incorporated in this new Spinning Frame Drive. Both sheaves—the variable pitch and the companion—employ the Taper-Lock principle.

The variable sheave locks as a unit when tightened on the shaft. It locks and unlocks easily, quickly, with the turn of a screw.

One-point adjustment establishes accurate pitch diameter; cylinder speeds are held within extremely close limits. Changes are made quickly, production is kept at maximum. In rare cases where a change in the companion sheave is required, the Taper-Lock principle makes the change quick and easy.

The slide motor base permits quick changes in center distances to preserve proper belt tension as the variable sheave is adjusted for changes in speed. Latest design Sealed-Life Belts have deep sidewalls and lateral rigidity for efficient operation.

All components are engineered to operate in perfect harmony. For details write for Bulletin A-618.

DODGE MANUFACTURING CORPORATION
1400 UNION STREET, MISHAWAKA, INDIANA

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

...From SPARTANBURG, S.C.

CDF

TEXTILE NEWS

DILECTO

CONDITIONING BOXES

Want boxes that resist moisture, chemicals, steam, and dyes? C-D-F builds a superior line of boxes and trucks from Dilecto, a tough laminated phenolic plastic. Although higher priced, Dilecto boxes last for years, are little affected by many acids, are insoluble in ordinary solvents. They withstand heat, steam, water. Get the facts. Talk over your special materials handling problems with an expert . . . your C-D-F sales engineer.

DIAMOND FIBRE

ROVING CANS

Strong, tough, smooth, That's the industry reputation for C-D-F roving cans. Genuine Diamond Vulcanized Fibre body is finished inside and out with a moisture resistant synthetic enamel. Steel top rim is rust resistant plated, smooth, snugly fitted. From a sample can to carload full . . . with C-D-F you get smooth, seamless uniformity.

Write now for new folder showing complete C-D-F receptacles line!

ALL PRODUCTS OF

Continental-Diamond Fibre Company

NEWARK 55, DELAWARE

. . . with Textile Headquarters at 834 Haynes Street, Spartanburg, South Carolina. Call Spartanburg 3-6397 for DILECTO and DIAMOND FIBRE materials handling equipment . . . trucks, boxes . . . loom parts . . . top-speed shipments of CELORON silent gear blanks . . . friendly service from your C-D-F sales engineer.

which traps the liquids and delivers clean air to all outlets.

In tests, 97% of entrained water was removed from 100 cfm. of air at 100-lb. pressure. Oil and moisture captured in the condenser tube are easily drained by a pull-push drain knob. (U-6)

Handy Steel Drawers

Welded, all-steel drawer units that, when bolted together in scores of combinations, can be tailored to almost any shop or office space have been developed by Standard Pressed Steel Co., Box 571, Jenkintown, Pa. Making it easy to put storage space where it is wanted, the drawers are designed to be used one on top of the other in tiers of from two to five or more. They can also be used singly. Of heavy-gauge steel, the drawer units are completely enclosed, they can be assembled to stand on the floor, in cabinets, or on bench tops; to hang from bench tops; or to be fastened to tool stands and desks. Sizes are 14 x 15 x 5, 14 x 20 x 5, and 20 x 20 x 6 in. (U-7)

Improved Stapler

A stapling machine utilizing staples that can be removed with a flick of the finger is a new development of Speed Products Co., Inc., Long Island City, N. Y. Designed for tagging operations employed in the apparel and textile industries, the lightweight pliers are contour-fitted to the hand for easy use. It requires a minimum of pressure for operation as the power ratio at the handles' end has been stepped up to 4:1. The plier provides a raised anvil to staple through heavy fabric or sheaves of paper with maximum clinching efficiency. (U-8)

Indelible Ink Marking Tubes

New easy-to-use writing tubes with indelible inks for the permanent marking of textiles of all types have been developed by John P. Nissen, Jr., Co., Glenside, Pa. The tubes reduce cut-offs and are ideal for marking fabrics wherever permanent identification is required in textile mills, from the loom through finishing. The dye-resist colors resist soaping, washing, degumming, fulling, caustic, carbonizing, and dyeing. The bleachproof color will not bleach out and will withstand hard usage, weathering, and washing. The writing tubes are equipped with various-sized ball-point attachments for different applications. Tubes are burstproof, and no skilled labor is required to operate them. (U-9)

Industrial Fan Available

A new, rugged industrial fan built with either an air-handling, a materials-handling, or a long-shavings wheel is now available from the Westinghouse Electric Corp., Box 2278, Pittsburgh, Pa. The fan is made in 11 sizes, with capacities ranging from 670 to 44,000 cfm. and pressures up to 16-in. water gauge. The air-handling wheel has backwardly inclined blades featuring low power consumption over a wide range of volumes and pressures. It is particularly suitable for exhausting smoke, fumes, and light dusts. The heavy-duty, straight-bladed materials-handling wheel combines high fan efficiency with its materials-handling features. The long-shavings wheel has no side plates and is designed for handling long stringy fibers. (U-10)

Plastic Tote Boxes

Completion of facilities to manufacture a new line of plastic tote boxes has been announced by Tewes-Roedel Plastics Corp., Waukesha, Wis. These industrial trays and carriers, available in a serviceable range of sizes, have been engineered and designed for economical use of a new plastic material. The copolymer sheeting from which these "Tew-Roe-Totes" are made is characterized by unusual impact strength, lightweight, and resistance to common acids, oils, and greases. The boxes are chipproof, corrosionproof, and not subject to warping. One-piece construction provides strength, ease of cleaning, and compactness. (U-11)

Rubber and Plastic Tapes

A complete new line of electrical tapes has been introduced by Ideal Industries, Inc., 1612 Park Ave., Sycamore, Ill. Types include a four-coated, ravel-free friction tape; a quick-fusing, high-dielectric rubber tape; and a two-in-one plastic tape. The new plastic tape makes an excellent insulating medium for electrical equipment. Its minimum thickness (.007 in.) plus its two-way stretch let it fit snugly to irregular shapes and surfaces. A few layers provide insulation without bulk. Both tape and adhesive are free of corrosive substances. (U-12)

Steam-Jet Cleaner

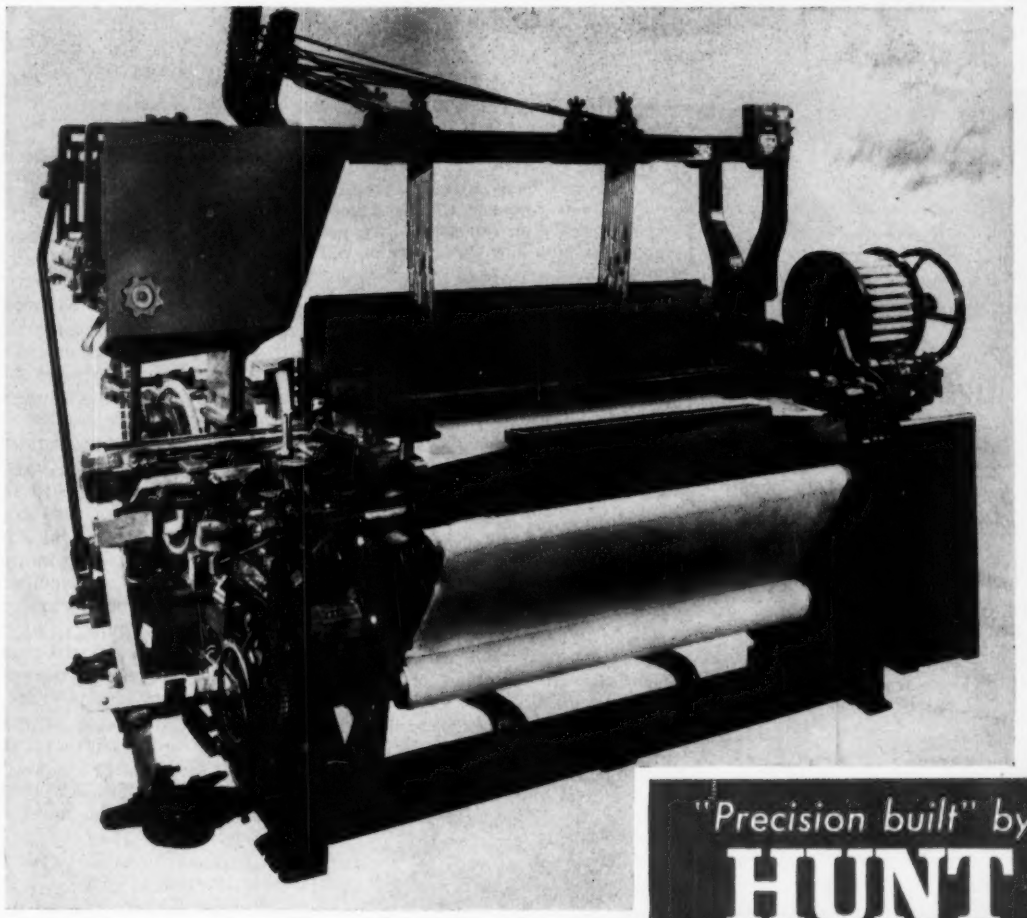
To meet demands for faster and more effective cleaning of processing equipment, machine tools, windows, and lighting fixtures in plants during regular working hours, Livingstone Engineering Co., 110 Grove St., Worcester 5, Mass., has announced improvements in its "Speedy-electric" steam-jet cleaner, Model JC-30. Similar in general design and construction to the company's original "JC-30," this latest unit operates at higher pressures (to 200 psi.) and thus it has increased effectiveness and speed with steam jets of "supersonic velocity."

Hot, dry steam—alone or with solvents, soap, or detergents atomized under the finger-tip control of the operator—blasts the object to be cleaned at speeds up to 1,200 ft. per sec. Unlike conventional fuel-fired cleaners, which depend for their cleaning action on many gallons of hot water under pressure, the new unit is all electric and so can be used indoors for cleaning without flooding the working area or disturbing operators at nearby machines. (U-13)

Thermosetting Sheet Laminate

A new grade of laminated thermosetting sheet material, $\frac{1}{16}$ to $\frac{1}{4}$ in. thick, has been introduced by Continental-Diamond Fibre Co., Newark, Del. Called "Dilecto GM-1," the material is a glass-fiber-mat, melamine-resin-bonded product with high arc and flame-resistance qualities. Said to be lower in cost than currently available woven-glass-fabric-base melamine laminates, GM-1 is suitable for many applications: switchboard panels, subpanels, structural parts, and arc barriers for switches and circuits breakers. The product has high tensile, flexural, and impact strengths. It is moisture resistant and possesses good electrical properties, particularly arc resistance. Heat resistance is rated at 300° F. continuous and 350° F. intermittent. (U-14)

Here's the NEW HR 50 LOOM



"Precision built" by

HUNT

for better, faster Rayon weaving

A new Hi-Speed Rayon Filament Loom designed and "precision-built" by Hunt to meet the industries' need for increasing production of Rayon and other synthetics.

Thousands saw this new loom in high speed operation, weaving Fiberglas at the 17th Southern Textile Exposition, Textile Hall, Greenville, South Carolina, October 6-11, 1952 and also, at the Hunt plant weaving filament rayon.

Hunt "precision-built" looms and loom parts are manufactured right in the heart of the Southern Textile Industry. Hunt's experienced engineers are available any time to come to your plant for a production-line discussion of your weaving problems.

Call, Write or Wire

HUNT LOOM & MACHINE WORKS, INC.

200 ACADEMY STREET • GREENVILLE, SOUTH CAROLINA

Manufacturers of: LOOMS • MOTOR DRIVES • SPREADERS • SIZE PUMPS
HYDRAULIC CRANKSHAFT PRESS • LOOM PARTS

Outstanding features of this New HR 50 Loom

- **Heavier loom sides add the necessary weight to permit operation at high speed.**
- **Vibration is reduced to a minimum.**
- **Weaves cloth up to 66" wide.**
- **Equipped with Hunt Spreader, Individual Motor Drive, Low Roll Take-up, Bartlett Let-off, Center Filling Fork; 6-Bank Electric Stop Motion and Adjustable Loom Beams.**

DARY
Ring Travelers

EVERY DAY
IN EVERY WAY . . .

The only way we know of improving your daily spinning and twisting operations is to keep everlastingly on the lookout for *better* methods.

One good place to start is your everyday traveler problems. The fine quality and sturdy service given by Dary Ring Travelers could mean improved production for you. Why not call a Dary representative now?

Always specify
DARY Ring Travelers

THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY L. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

protected from the steam or they will be ruined.

Stiff hair or wire brushes may be used effectively with a cleaner to clean the loom.

Warp sheddings impregnated with plastics are harder to remove than the usual warp sheddings; therefore, the looms must be cleaned frequently to prevent heavy accumulations of lint.

Laundry Bags Can Be Made On Two-Bar Tricot Machines

Technical Editor:

Can I knit mesh laundry-bag fabrics with 260-den. nylon on tricot machines? What would be the gear ratio of the pattern wheels, and how would they be cut? (9628)

You can use a 14-gauge tricot machine.

You would require a very open mesh. One-in, one-out threading up would be necessary on both bars.

The pattern wheel steps should be:

Front Bar: 2-3, 2-1, 2-3, 2-1, 2-3, 2-1, 2-3, 2-1, 2-3, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0.

Back Bar: 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 1-2, 1-0, 2-3, 2-1, 2-3, 2-1, 2-3, 2-1, 2-3.

These wheels have 32 steps and require a gear ratio of 1 to 16.

The threaded guides should be gaited opposite each other as they begin to swing through on the first course of the design.

The runner lengths should be set to give a 1-to-1 ratio.

A raschel-type machine, however, is more suited to laundry netting. Several such machines are built to do this type of work.

Use a Tube-Type Marker If Processing Follows Quickly

Technical Editor:

What ink is suitable to use with a rubber stamp to mark gray cloth so the ink still shows after the cloth is finished? (9583)

In most cases, mills and finishers require a quick-drying ink that will not spot off if the cloth is rolled or folded, and that will resist processing within an hour. This type of ink is not used on pads. The pads become sticky, pick up lint, dry out hard, and make that method very costly. The tube-type marker was developed for the application of quick-drying inks, and up until now it is still the most practical method we have found.

Stamp-pad inks are for use with rubber or metal stamps. Normal markings on cotton will not spot off, but due to the slow drying nature of the ink, will not reach full permanency for three to five days. These inks are used mostly for trade-marking finished goods, and in hospitals, hotels, laundries, etc. If drying time was no factor, these inks could be used to resist finishing processes, depending, of course, on the type of cloth, conditions in the mill, etc.

Textile Uses of Sodium Alginate

Technical Editor:

For what purpose is sodium alginate used in the textile industry? What product does it replace? (9584)

Sodium alginate has come into widespread use in the printing of textiles, particularly synthetic fibers. To some extent it has replaced natural gums, such as gum arabic and gum tragacanth. These gums are not only scarce but also expensive. Sodium alginate provides a thickening medium at a very reasonable cost.

On all fibers, sodium alginate, alone or in combination with starch thickeners, makes a smooth paste that gives a level, uniform print with sharp edges and good penetration. This is especially important in the printing of viscose, acetate, and similar fibers where it is difficult to obtain a smooth, level print that is not pinny or blotchy. In addition, sodium alginate is readily removed in the soaping operation and thus leaves the goods soft. Starch thickeners, which are generally considered to be the cheapest print-color carriers, are not readily washed out, and may leave the object firm and stiff with an adjacent unprinted portion left soft. This condition is especially objectionable in blotch work on synthetics.

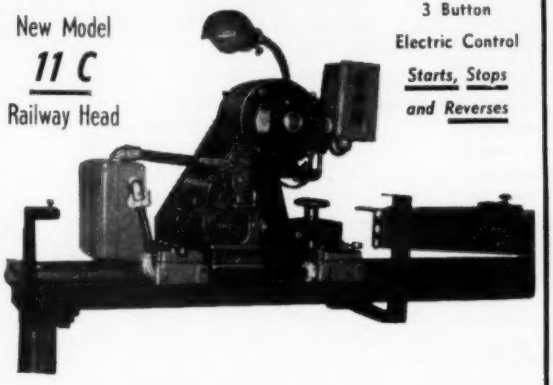
Sodium alginate can be used as a thickener for acetate, acid, direct and basic colors for the printing of acetate, wool, viscose, and silk fabrics. It is used also as a thickener with the azoic and leuco ester colors for both cotton and synthetic printing. The thickener may be used for both machine and screen printing.

A small quanity of sodium alginate used along with pigment colors and the resin binders gives a more level and smooth dyeing than when resin-fixing agents alone are used. Apparently, the sodium alginate helps to prevent migration and promotes a uniform flow and penetration of the pigment padding emulsion.

This chemical has also been used for the slashing of synthetic yarns and, to some extent, as a finishing agent. Again these uses have been primarily on synthetic fibers and not on cotton goods.

New Model
11 C
Railway Head

3 Button
Electric Control
Starts, Stops
and Reverses



with Merrow Butted Seaming Head

Push button control travels with the motor. Motor controlled through magnetic switches.

All bars, levers and parts for mechanical control eliminated. Reduced maintenance cost.

Operator has instant control of sewing. Sewing stops at end of seam automatically.

Reverse button returns head to starting position while operator prepares fabric ends for next sewing. Head stops at starting position automatically.

Sewing unit remains idle while Head travels in reverse. Clutch operates in reverse by power or by hand. Model 11B without power reverse has two button control.

New safety guard over cloth pins. New electric cable folds away without dragging.

Can be equipped with Dinsmore single Chain Stitch Sewing Heads.

Send samples for trial. Any fabric. Any width.

DINSMORE MFG. CO.
Box 267 Salem, Mass.

EISENBERG FIBERS, INC.

SYNTHETIC GARNETTS
NYLON • DACRON • ORLON
PERLON • VICARA

173 Hudson Street
New York 13, New York
Canal 6-4290, 4291

Mill:
Hope Valley, R. I.

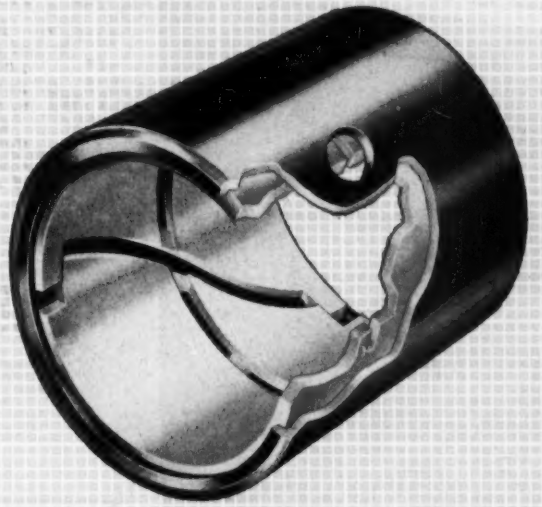
When You Change Your Address . .

It will help us keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

Director of Circulation
TEXTILE WORLD,
330 West 42nd St., New York 18, N. Y.
Please change the address of my Textile World subscription.

Name .....
Old Address .....
New Address .....
New Company Connection .....
New Title or Position .....

NYLINED* **BEARINGS**



... with Smooth, Tough, DuPont NYLON

Solve Many Bearing Problems

• RESILIENCY RESISTS POUNDOUT • PERMIT DRY OPERATION • MINIMIZE ABRASION FAILURES • SILENT OPERATION • LOWER FRICTION • SUPERIOR CORROSION RESISTANCE • OPERATE IN LIQUIDS • ELIMINATE FRICTION OXIDATION • LIGHT WEIGHT • DAMP MECHANICAL VIBRATION • EXTREMELY COMPACT • CLOSE FITS • NON-CONTAMINATING • LOW COST • LONGER LIFE • LESS MAINTENANCE • BEARING SURFACE INSTANTLY REPLACEABLE

*NYLINED Bearings have a highly engineered thin liner of DuPont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use.

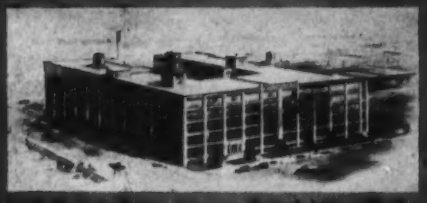
For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 11
Manhasset, New York

Also Manufacturers of BALL BUSHINGS...
The Ball Bearing for Linear Motions

Stehedco
and
Southern

WORLD FAMOUS TRADE NAMES OF THE
STEEL HEDDLE MFG. CO.
and SOUTHERN SHUTTLES DIVISION



Parts, Greenville, S. C.

Manufacturers of

Flat Steel Heddles • Loom Harness Frames • Loom Reeds (Pitch Band and All Metal, Regular and Stainless Steel Wire) • Loom Harness Accessories • Automatic and Hand Threaded Southern Shuttles (Tempered Dogwood, Persimmon, and Fibre Covered) • Warp Preparation Equipment • Electrode Rods (Fibre and Plastic Insulation) • Drop Wires • Creel Stop Motions • Pigtail Thread Guides • Tension Washers • Light Metal Stampings • Hard Chrome Plating • Hard Chrome Plated Parts • Rayon Cake Holder

248 McDonough Blvd. • Atlanta 1, Ga.

STEEL HEDDLE COMPANY OF CANADA, Ltd.

219 St. Hubert Street • Granby, Quebec, Canada

STEHEDCO and SOUTHERN Products

"Weave the World's Needs"

Fabric Engineering (*Continued from page 137*)

We now have the data we need. A summary of the construction of the wanted finished nylon fabric is therefore:

	Wanted filament-nylon fabric
Estimated weight, oz. per sq. yd., W_z	2.1
Yarn size, warp, H_w	100 den.
Yarn size, filling, H_f	100 den.
Ends per inch, n_w	81.5
Picks per inch, n_f	76

In more complicated situations, the warp and filling yarns may be of different size—that is, the yarn balance (count balance) is not 1.00, or the fiber density of the warp yarn may not be the same as that of the filling yarn. These and similar problems can be handled by the fundamental formulas.

On the other hand, when the use of fiber blends is involved in the design, a formula for figuring fiber density is required. Letting D_A represent the fiber density of fiber A, P_A the percent by weight of A in the blend, and so on for fibers B, C, etc., we find that

$$\text{fiber density of blend, } D = \frac{100}{\frac{P_A}{D_A} + \frac{P_B}{D_B} + \frac{P_C}{D_C}}$$

Example: What is the fiber density of a blend of 70% Orlon and 30% viscose? The fiber density of Orlon being 1.14 and that of viscose 1.52, we find that

$$\text{fiber density of blend, } D = \frac{100}{\frac{70}{1.14} + \frac{30}{1.52}}$$

$$= \frac{100}{61.4 + 19.7}$$

$$= 1.23$$

Textile Calendar

AATT, monthly meeting, Builders Club, New York, March 4, 1953.

ASTM, Committee D-13, spring meeting, Park-Sheraton Hotel, New York, March 18 to 20, 1953.

CATCC, Quebec Sect., McGill University, Montreal, March 21, 1953.

ACMI, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 26 to 28, 1953.

AATT, monthly meeting, Builders Club, New York, April 1, 1953.

Alabama Cotton Mfrs. Assn., annual meeting, Buena Vista Hotel, Biloxi, Miss., April 9 to 11, 1953.

Carpet Fashion Bazaar, Carpet Institute, New York, April 13 to 23, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 17, 1953.

CATCC, Quebec Sect., annual meeting and dinner, Mount Royal Hotel, Montreal, April 17 and 18, 1953.

AATCC, Mid-West Sect., Netherland-Plaza Hotel, Cincinnati, Ohio, April 18, 1953.

Southern Assn. of Science and Industry, regional conference, New Orleans, La., April 20 and 21, 1953.

22nd AMA National Packaging Exposition, Navy Pier, Chicago, Ill., April 20 to 24, 1953.

Fiber Society, spring meeting, New Orleans, La., April 22 and 23, 1953.

Cotton Mfrs. Assn. of Georgia, annual convention, Boca Raton Hotel, Boca Raton, Fla., April 23 to 25, 1953.

Natl. Assn. of Hosiery Mfrs., annual convention and conference, Claridge Hotel, Atlantic City, N. J., April 27 and 28, 1953.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

British Industries Fair, Castle Bromwich, Birmingham England, April 27 to May 8, 1953.

AATT, monthly meeting, Builders Club, New York, May 6, 1953.

Phi Psi Fraternity, 50th annual convention, Penn-Sheraton Hotel, Philadelphia, Pa., May 7 to 9, 1953.

Materials Handling Exposition, Convention Hall, Philadelphia, Pa., May 18 to 22, 1953.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., May 22, 1953.

Textile Institute, annual conference Llandudno, North Wales, May 25 to 30, 1953.

American Society for Quality Control, Textile Div., Convention Hall, Philadelphia, Pa., May 27 to 29, 1953.

South Carolina Textile Mfrs. Assn., annual convention, Sea Island, Ga., May 28 to 30, 1953.

Canadian International Trade Fair, Exhibition Park, Toronto, Ont., Canada, June 1 to 12, 1953.

AATT, monthly meeting, Builders Club, New York, June 3, 1953.

STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 18 to 20, 1953.

ASTM, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3, 1953.

International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31, 1953.

Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11, 1953.

AATCC, national convention, Conrad Hilton Hotel, Chicago, Ill., Sept. 17 to 19, 1953.

Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14, 1953.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24, 1953.

North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16, 1953.

1954

Knitting and Allied Crafts Exposition, Grand Central Palace, New York, April, 1954.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.

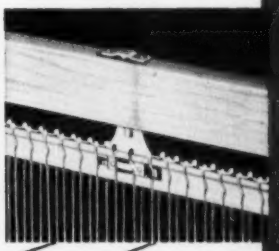
American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.

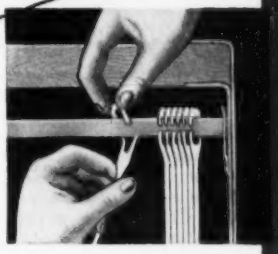
Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

Changes are being made...

and NOW is the Time

to change to Stehedco Drawtex Frames and Heddles





Consider the Advantages in changing over to the only original and exclusive STEHEDCO DRAWTEX FRAMES and HEDDLES for the change that gives both advantages and savings in Warp preparation.

Steel Heddle Mfg. Co., universally known for Stehedco & Southern Products that "Weave the World's Needs", in close cooperation with Barber Colman, has developed the proper harness for use with Warp drawing in equipment.

When you change your harness . . . Think of what these Exclusive Stehedco Features will mean. Freedom from Warp Streaks caused by harness. Longer Heddle Life—Fewer Seconds. Less Harness Adjustment in Looms. Greater Production and Versatility for both Heavy and Light Yarns.

Remember when changing your Harness you are changing to production of Top Quality firsts.

Consult our staff of field Engineers for full information-

Stehedco and Southern
WORLD FAMOUS TRADE MARKS OF THE
Steel Heddle
Mfg. Co.

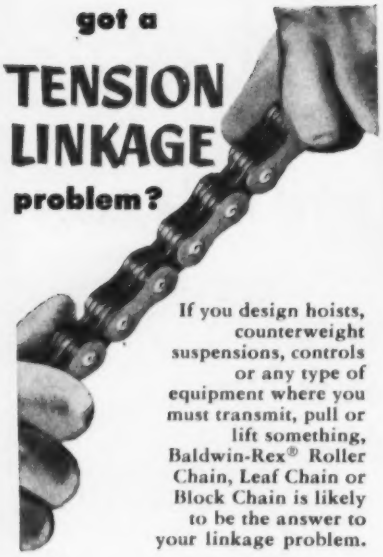
STEEL HEDDLE MFG. CO., 2100 Allegheny Ave., Phila. 32, Pa.
SOUTHERN SHUTTLES Paris Plant... Greenville, S. C.
A Division of STEEL HEDDLE MFG. CO.
STEEL HEDDLE COMPANY OF CANADA, LIMITED
310 St. Hubert Street • Granby, Quebec, Canada

Other Plants and Offices: Greenville, S.C. • Atlanta, Ga. • Greensboro, N.C. • Providence, R.I.

1-0-1

got a

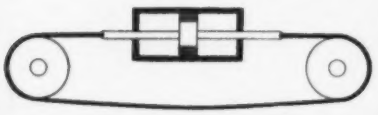
TENSION LINKAGE problem?



If you design hoists, counterweight suspensions, controls or any type of equipment where you must transmit, pull or lift something, Baldwin-Rex® Roller Chain, Leaf Chain or Block Chain is likely to be the answer to your linkage problem.

here's a good example:

Transmission from a double-acting hydraulic cylinder to a shaft. Since motion must be transmitted in two directions, an idler sprocket is required as shown in the illustration. Since operation may be practically continuous, and shock effects are probable, *chain* is the answer. When this type of installation is applied to rudder control, shock and fatigue considerations are especially important.



our Tension Linkage bulletin

Covers typical examples of tension linkage applications . . . helpful step-by-step data on equipment selection and examples to guide you in making your selections. There are tables of dimensional data and other important facts you'll find useful in your work. Send for your free copy today. Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.

BALDWIN-REX

ROLLER CHAINS

A PRODUCT OF

Chain Belt COMPANY

OF MILWAUKEE

District Sales Offices or Distributors in principal cities throughout the world.

News OF THE MONTH

1954 EXHIBITION PLANS

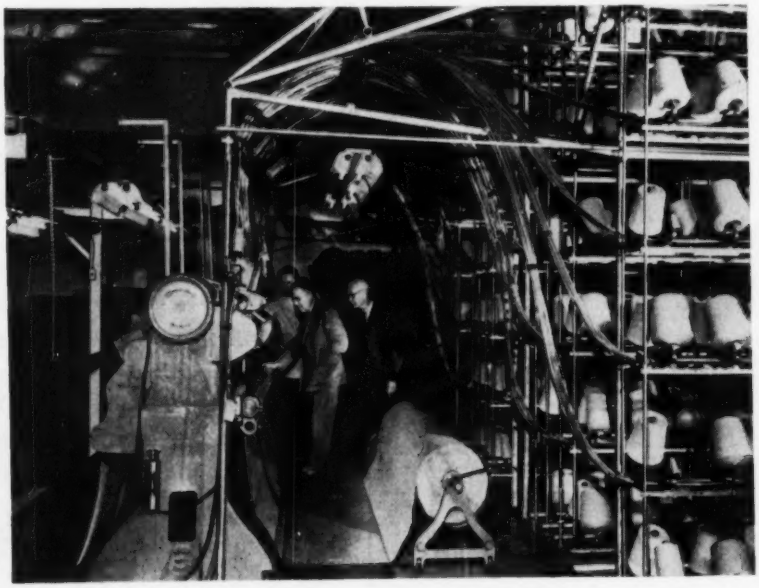
Mrs. Mildred Barnwell Andrews, well-known textile consultant, author, and publicist, and a regular contributor to TEXTILE WORLD, has been appointed public relations director for the American Textile Machinery Exhibition to be held in Altantic City, N. J., from April 26 to 30 of next year. The event is sponsored by the American Textile Machinery Assn., which also sponsored the Atlantic City exhibition of 1950.

William K. Child, vice president of Draper Corp., Hopedale, Mass., is chairman of the association's exhibition committee. Albert C. Rau of Campbell-Fairbanks Associates, Boston, Mass., is manager of the exhibition.

The exhibition will primarily be designed to show mill men the industrial engineering, mechanical developments, and advanced equipment that are the result of research and engineering projects sponsored by the exhibiting companies. The exhibition will also stress the historical significance and the educational, sociological, and economic importance of textile-machinery manufacturing.

FLAMMABILITY STANDARD APPROVED

A test method for apparel-fabric flammability (L 14.69-1952) has been approved as an American standard by the American Standards Assn., New York, N. Y. All fabrics for wearing apparel that meet the requirements of the recently adopted American standards for rayon, acetate, and



NEEDLE-STITCHED COTTON CARPETING

FOURTEEN-FT.-WIDE TUFTING MACHINE capable of matching the output of 20 conventional carpet looms has been developed by Magee Carpet Co., Bloomsburg, Pa. Its 1,100 needles stitch cotton yarn into a backing of twill-weave jute and kraft material.

Aluminum tubes feed the yarn from the 30,000-lb.-capacity creel at the right for production of the company's new line of cotton carpeting, in 9- and 12-ft. widths, at speeds of 2 to 4 yd. per min.

A coating of a new synthetic plastic latex, developed with the aid of U. S. Rubber Co., on the back of the carpeting locks the individual loops to the backing. Each loop will withstand a 9-lb. pull. The carpeting is then dyed in the piece.

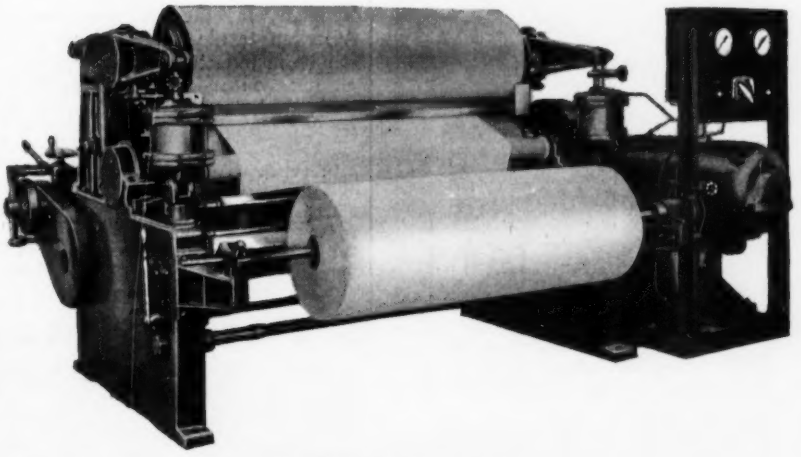
Shown inspecting the new machine at the Bloomsburg plant are Magee Carpet Co. executives James G. Law, Harry L. Magee, and Frank Groat.

A GRAND OLD CHAMPION

John L. Sullivan, America's first world champion fighter, held his title for many years solely on his natural strength and ability to take punishment. Today he is known as "The Last of the Gladiators" because his style of fighting doesn't win championships against fast stepping and hard hitting boxers.

Almost every processing plant has a few old machines — champs in their day — that should be retired and replaced with modern equipment. How about padders? Van Vlaanderen has developed a superior Heavy Duty Padder and Resin Impregnator. Massively constructed and having many modern design improvements, this machine is built in every way to the Van Vlaanderen standard for greater production and finer quality of finished goods.

John Lawrence Sullivan (1858-1918) won his first fight at 19 from a carnival strong man. He was champion of the world from 1880 to 1892, when he was defeated by James J. Corbett.



This is a good time to study your dye house equipment with a critical eye. Why not ask our engineers to make suggestions for improvements?

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, • Paterson 3, New Jersey

Cable address: Vlaanderen, Patersonnj, U.S.A.

Southern Representatives: Parrott and Ballentine

610 South Carolina National Bank Building • Greenville, South Carolina

WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS

IVES

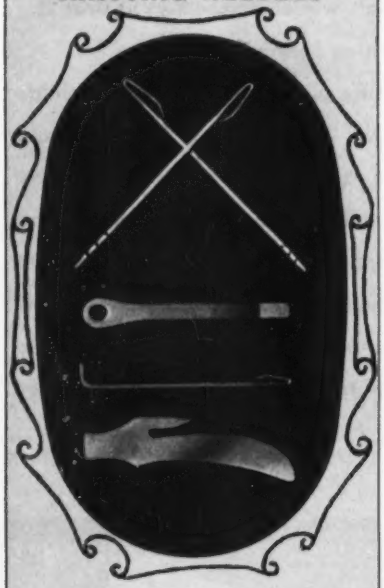
GIVES LONGER WEAR BY BETTER

Spring-back

IN

TRICOT

SPRING BEARD KNITTING NEEDLES



No matter what type of Spring Beard Knitting Needles you want—for circular, full-fashioned or tricot knitting machines . . .

IVES MAKES THEM

Also, Sliders, Sinkers, Jacks, Guides, Sley Points, Looper Points, Transfer Points or Quills, for Spring Beard and Latch Needle knitting machines.

THE LOYAL T.

IVES

COMPANY, INC.

Established 1872

NEW BRUNSWICK, N.J.

NEWS *of the Month*

mixed fabrics must now also meet the new flammability requirements.

To fall into the Class-1 flammability category, a fabric must (a) without a raised fiber surface, have a time spread in the test of more than 4 sec.; or (b) with a raised fiber surface, have a time of flame spread in the test of more than 7 sec. or burn in less than 7 sec., provided the intensity of the flame is insufficient to ignite or fuse the base fabric.

The flammability standard, still only a voluntary arrangement, was developed by the American Assn. of Textile Chemists & Colorists. It has also been adopted by the American Society for Testing Materials and is similar to the new commercial standard that took effect January 30.

FRENCH-SYSTEM EQUIPMENT FOR LTI

Thirty thousand dollars' worth of new French-worsted machinery has been installed for second semester work this year in the woolen and worsted yarn department at Lowell Textile Institute, Lowell, Mass. Atkinson, Haserick & Co. of Boston arranged for the purchase of the equipment, which consists of six drawing operations and a French spinning frame. A Whitin Machine Works frame has also been added to the department.

The new equipment makes the department, headed by Prof. James H. Kennedy, Jr., the only one in any American textile school where yarns can be manufactured for comparative purposes on modern French-, Bradford-, and American-system machinery.

NEW AATCC SECTION

A new Washington, D.C., Section of the American Assn. of Textile Chemists & Colorists has been formed. Dr. Walter M. Scott of the U. S. Dept. of Agriculture is councillor for the new group. Sixty-five AATCC members attended the first meeting in January.

Other officers of the Washington Section are Dr. Milton Harris, chairman; Dr. Henry Barker, vice chairman; and George S. Buck, secretary.

COTTON AMBASSADRESS IN NEW YORK

1953 MAID OF COTTON, Miss Alice Corr of Selma, Ala., was recently welcomed to New York City's primary textile market in a ceremony at the offices of the Assn. of Cotton Textile Merchants. John M. Reeves (left), president of Reeves Bros., and J. E. Bradley (right), vice president of Pacific Mills, were among those who welcomed her.

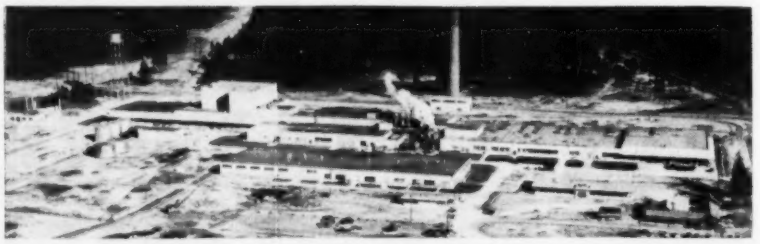
The cotton ambassadress' tour of 30 American cities, Europe, South America, and Canada began last month.

NEW ENGLAND WAGE IMPASSE

March 15 is the date set by member mills of the Fall River, Mass., Textile Mfrs. Assn. and the New Bedford, Mass., Cotton Mfrs. Assn. for termination of their contracts with the Textile Workers Union of America, CIO. The 21 mills in the two groups cite the 18- to 24¢-an-hour differential between the North and South as the reason for the step. Already several mills have moved South or liquidated completely.

Meanwhile, 350 union delegates representing the cotton and rayon

BRITISH RAYON PLANT GETS INTO PRODUCTION



THE WORLD'S NEWEST RAYON PLANT at LeMoyne, Ala., was formally opened last month by Courtaulds (Alabama), Inc., New York. Located on a 550-acre site 20 miles north of Mobile, the plant has a capacity of more than 50,000,000 lb. annually. Full production will be reached next month.

standardize on standard

UNBRAKO®

SOCKET CAP SCREWS

Knurled heads for sure finger grip and fast assembly; accurate hex sockets for positive, non-slip internal wrenching; made of heat treated alloy steels. Fully formed threads, Class 3 fit. Controlled fillet and continuous grain flow assure unusual strength. Available in standard sizes from #4 to 1" in a full range of lengths. Stocked by your local industrial distributor. To save time and money, write for UNBRAKO Standards. SPS, Jenkintown 35, Pa.

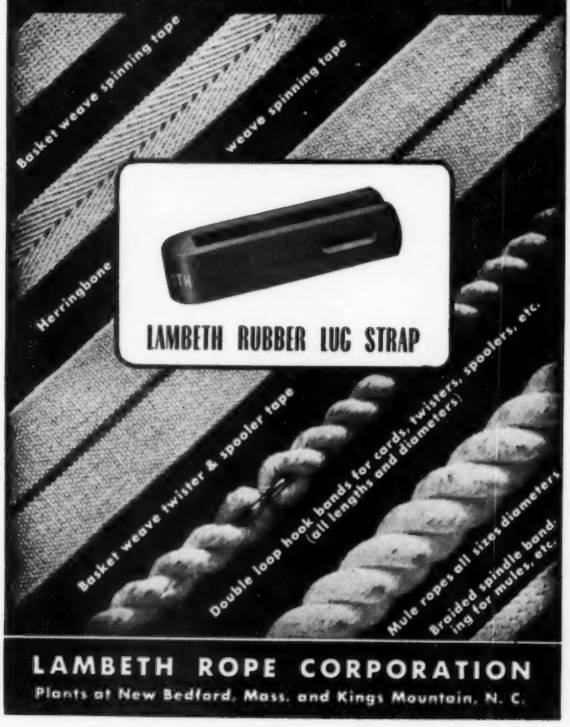
Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION **SPS**

JENKINTOWN PENNSYLVANIA

LAMBETH PRODUCTS

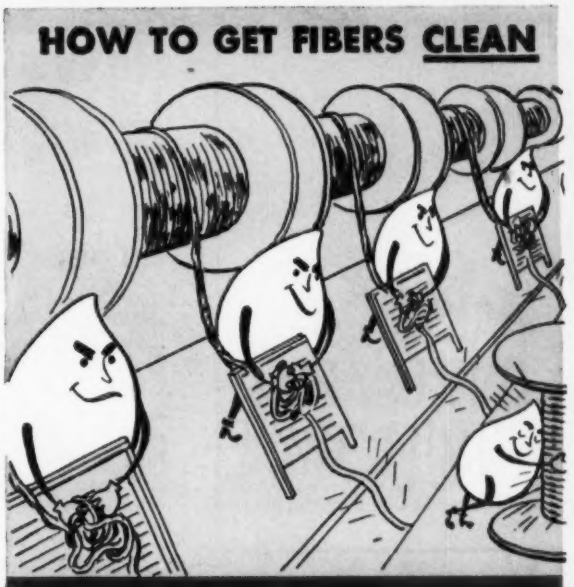
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
LAMBETH RUBBER LUG STRAP
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION

Plants at New Bedford, Mass. and Kings Mountain, N. C.

HOW TO GET FIBERS CLEAN



... Versene*

VERSENE* GETS THEM CLEAN

Completely clean textile fibers present far fewer processing problems. Softer "hands" and whiter "bottoms" are the natural result, along with level dyeing and the elimination of iron, lead and other metallic stains. Versene softens hardest water thoroughly and *permanently — without* the formation of precipitates. Versene prevents the formation and deposition of insoluble soaps on textile fibers. Versene complexes, sequesters or chelates the metallic ion contaminants that have complicated wet processing problems for so many years.

CHELATION — THE NEW CHEMISTRY

Chelation and the Versenes, through the exacting chemical control of cations in solution, are saving millions by preventing spoilage, improving quality and cutting process time. Woolens, Cottons and Synthetics all benefit.

FIND OUT ABOUT THE VERSENES

The Versenes are exceptionally stable at elevated temperatures throughout the pH range. Unduplicated and guaranteed for uniformity of quality and complexing power, they are made only by the Bersworth Chemical Company under processes originated, developed and patented by F. C. Bersworth. Available in wet or dry form they deserve your serious consideration. We will be glad to show you how to use them. Write Dept. D for Technical Bulletin #2. Ask for samples. Chemical Counsel on request.

VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gallon. Versenate method. Complete with instructions $5.00 Postpaid.

KEY TO CHELATION

"Chemistry's most precise chemicals"

BERSWORTH CHEMICAL CO.

FRAMINGHAM, MASSACHUSETTS

*Trade Mark Registered

WAREHOUSE STOCKS

Providence Agent: George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, R.I.
W. Coast Agent: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th Street, Chicago
Wasatch Chemical Co., Salt Lake City, Utah
Southwest Agents: Barada & Page, Inc., Dallas, Houston, Kansas City, etc.
Chas S. Tanner Co., 1815 Liberty Life Bldg., Charlotte, North Carolina
Siegel Chemical Co., Brooklyn, New York

"MAKES ONE BEARING OUTLIVE TWO"

say Leading Textile Manufacturers

LUBRIPLATE Lubricants actually condition bearing surfaces and stop progressive wear. They prevent rust and corrosion and resist steam, hot water and many acids. They meet all conditions of the Textile Industry. Use LUBRIPLATE and make One Bearing Outlive Two.

For nearest LUBRIPLATE distributor, see Classified Telephone Directory. Send for free 56-page "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

NEWS *of the Month*

workers voted to fight for restoration of the 8½¢ wage cut granted to Northern mills through arbitration last summer.

FIBER SENSE

An appeal to stop the ballyhoo and recrimination between new-fiber supporters and cotton and wool interests was made by Carl A. Setterstrom, sales manager of textile fibers, Carbide & Carbon Chemicals Corp., at a recent Textile Distributors Institute forum in New York.

Seven truce suggestions were made, to clear the atmosphere from raw fiber to retail shelf:

1. Ban the phrase "miracle fiber."
2. Stop extravagant claims.
3. Keep advertising and promotion costs in line with the value of articles they are expected to sell.
4. Invest in the technologist, not the huckster.
5. Choose converters who know their business; their responsibility is heavy.
6. Admit that some fibers are better for some uses and some fibers for others and that blends are frequently better than a single fiber.
7. Look for functional merit in blends; don't use a fiber name alone as a "gimmick."

NEW TEST METHODS CONSIDERED

Requests have been received by Committee D-13 of ASTM from two sectional committees of the American Standards Assn. for advice and assistance on a number of test methods needed in connection with a new American standard for rayon and acetate fabrics.

The tests cover such subjects as absorbency, shrinkage of blankets, colorfastness to cleaning, crocking, and laundering, crease resistance, dimensional stability, and feather and downproofness. Also included are tests for permanency of finish after dry cleaning and after laundering, for resistance to yarn slippage, and for yarn shifting.

A joint ASTM-AATCC committee has submitted these tests to the appropriate groups in AATCC and ASTM for examination and study.

DACRON DELIVERIES DELAYED

A critical shortage of an intermediate made it necessary to delay scheduling of last month's shipments of Dacron staple and tow. Production of the intermediate was cut because of operational difficulties at one unit of the Repauno Works, Gibbstown, N. J., and delay in construction of another unit.

The combination of events has delayed the opening of the new Dacron plant that is now being completed at Kinston, N. C. It was to have started up last month.

Up to now, production of Dacron has been limited to a small unit operating at Du Pont's Seaford, Del., nylon plant.

NEW ITT PRESIDENT-ELECT

DR. L. H. HANCE will assume the presidency of the Institute of Textile Technology, Charlottesville, Va., in September. For the last half of the present school year his title is executive vice president of the school. He succeeds Dr. J. L. Vaughn of the University of Virginia as president.

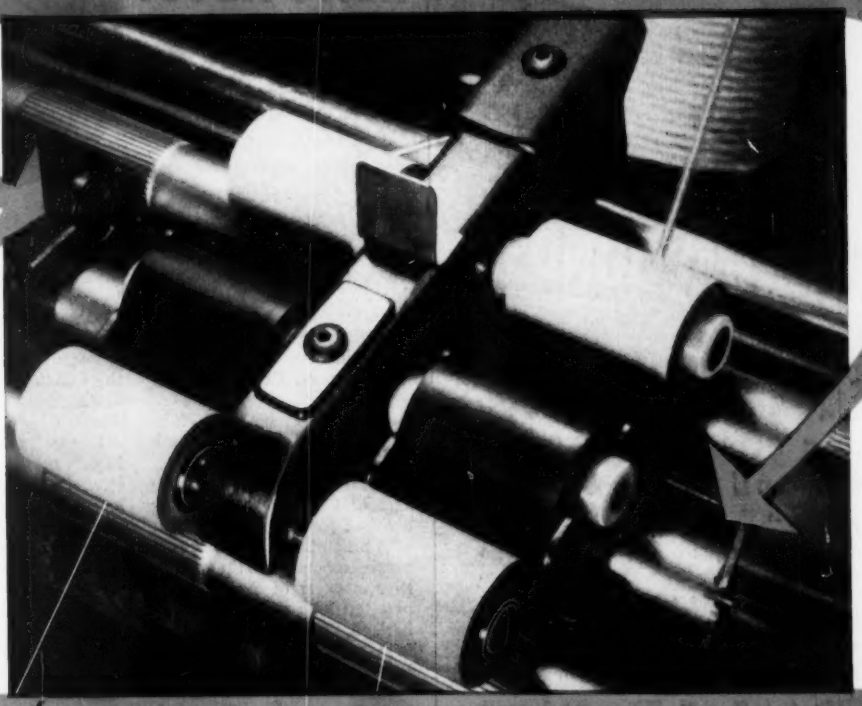
After obtaining M.S. and Ph.D. degrees from ITT, Dr. Hance became ITT research associate, then chairman of the committee on academic studies, and most recently assistant technical director.

PRODUCTIVITY IDEAS ON WHEELS

Ideas that will aid British mills in increasing their weaving production will be presented in the form of an exhibition on wheels that will soon be touring the chief Lancashire cotton-weaving towns. The tour has been arranged to speed the introduction into mills of results of research by scientists at the Shirley Institute—the British Cotton Industry Research

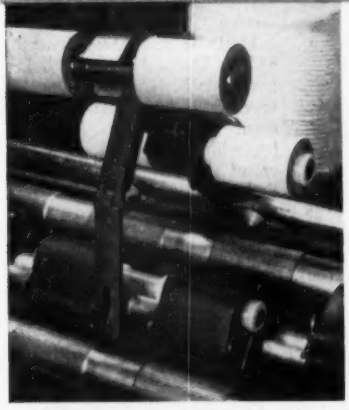
(*Continued on page 288*)

That's Right—NO CAP BARS!



Brand New CleanAlign Saddle

PATENTS PENDING



Rolls swing up for cleaning

eliminates ⅔ of the area to be cleaned, because there are NO cap bars

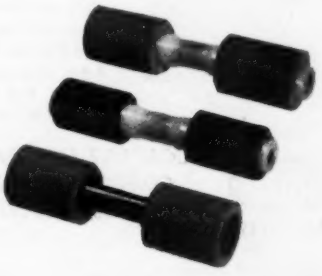
CLEANALIGN maintains rolls in perfect parallel alignment at all times. Illustrated in use with CLEANDRAFT Non-lubricating Top Rolls in back and middle lines and CLIMAX Ball-bearing Top Rolls on front line—

CLEANALIGN Saddle forms a completely non-lubricated arrangement: eliminating oiling expense; giving oil-free yarn; reducing picking cost by 75% to 90%.

The CLEANALIGN Saddle permits wide variety of weight distribution, easily changed.

Piecing-up from side possible.

The CLEANALIGN Saddle is applicable to practically any cotton spinning system.



FOR FURTHER INFORMATION ADDRESS

PRODUCT SALES, INC. 21 VERNON STREET WHITMAN, MASS.

Ala., Ga., La., Miss. & Tenn.	South Carolina	Va. & N. C.	Ark., Tex., Okla.	For European Service:
J. H. Canady 3344 LeBron Ave. Montgomery, Ala.	Dudley Dunlap Product Sales, Inc., P. O. Box 1863 Room 502 Montgomery Bldg. Spartanburg, S. C.	Raymond L. McCauley Product Sales, Inc. 412 Wilder Bldg. Charlotte, N. C.	Texas Roller Covering Works 1407 North 17th St. Waco, Texas	Victor Beecroft 54 Boroughgate Otley, Yorkshire, England

FOREIGN REPRESENTATIVES IN THE PRINCIPAL TEXTILE CENTERS OF THE WORLD

C.P.
LATEX COMPOUNDS

IMPROVE QUALITY, LOWER COST
in backing COTTON RUGS, PILE FABRICS and FLAT GOODS!

CUSTOM PROCESSING assures latex compounds suited precisely to your particular requirements in backing operations. Because "C.P." latex is specifically compounded for specific applications, uniformity of finished products is improved. Cost is lowered by eliminating much production trouble and time loss.

Improved quality plus production savings combine to give your products that vital "competitive edge" when you change to Montgomery Bros.' "C.P." latex.

To assure the best latex compounds for every job, Montgomery Bros., Inc. uses the newest of proven laboratory techniques. May we use our facilities and experience to recommend a better latex compound for your job . . . one that will improve the quality and lower the cost of your products? Call on us now!

GET FREE DETAILS ON C. P.!

Here are the facts on the control of latex compounds in backing processes. See how the use of "M.B." custom processed latex compounds can save you time, trouble and money while improving quality. Write today, for your free copy.

M.B. ADHESIVES

COMPLETE LINE OF LATEX COMPOUNDS FOR THE TEXTILE INDUSTRY

M.B. LATEX

MONTGOMERY BROS.
INCORPORATED—SINCE 1888
PENROSE & PACKER AVENUES
PHILADELPHIA 45, PA. DE 4-0418

NEWS ABOUT Suppliers

Equipment Suppliers

American Lava Corp., Chattanooga, Tenn., has appointed Joe E. Spearman as its Southeastern representative for AlSiMag thread guides. Mr. Spearman will have headquarters in Charlotte, N. C.

American Pulley Co., Philadelphia, Pa., has made the following appointments: Henry H. Hamilton, assistant manager of the materials-handling division; Joseph C. Salette, Jr., sales promotion and advertising manager; Samuel S. Stuart, district manager of the Philadelphia territory; and John J. McFarland, district manager at Minneapolis.

Baker-Raulang Co., Industrial Truck Div., Cleveland, Ohio, has purchased Lull Mfg. Corp., Minneapolis, Minn. It is planned to operate the organization as a wholly owned subsidiary under the name of Baker-Lull Corp.

Barco Mfg. Co., Chicago, Ill., has appointed Robt. E. Mason Co., Charlotte, N. C., as sales and service representative for North and South Carolina.

Crompton & Knowles Loom Works, Worcester, Mass., at its regular quarterly meeting elected Frederic W. Howe, Jr., president to succeed the late John F. Tinsley. Rufus S. Frost, vice president and treasurer, had been acting president. Mr. Howe, Jr., is the son of the late Frederic W. Howe, who was associated with the firm for 32 yr. prior to his death.

Draper Corp., Hopedale, Mass., has closed its Walker Div. in Philadelphia. The machinery has been moved to Pioneer Heddle & Reed Co., Atlanta, Ga., in which Draper has acquired an interest.

Fidelity Machine Co., Inc., Philadelphia, Pa., has appointed Roy Faigenbaum vice president in charge of sales, succeeding H. I. Green, resigned.

Glenwood Machinery Associates, Inc., formerly of 384 Glenwood Avenue, East Orange, N. J., has moved to 85 Chestnut St., Newark 5, N. J.

Hyatt Bearings Div., General Motors Corp., Harrison, N. J., has made F. H. Webster manager of the sales office in Chicago. He succeeds C. L. Newby, who has retired after 34 yr. of service. C. W. Kalchthaler is now assistant to the general sales manager, with headquarters at Harrison.

International Business Ma-

FRITZ LAMBACH, (left) was recently elected executive vice president of Robert Reiner, Inc., Weehawken, N. J. JOHN A. VOLLMANN, (right) was named secretary.

The *Speedline* system may cut your stainless piping costs in half!

● Here is a new idea in corrosion-resistant piping that combines *important savings* and *engineering advantages*. The *Speedline* system achieves these results by using light wall stainless pipe and the versatile *Speedline* Fittings which speed assembly time and give you tight, leak-proof joints.

As one engineer said: "We started to use *Speedline* Fittings with light wall pipe to save money. Now we find that we also get better flow conditions and increased capacity in our lines."

Here's how the *Speedline* system works:

If you are now using Stainless Pipe . . .

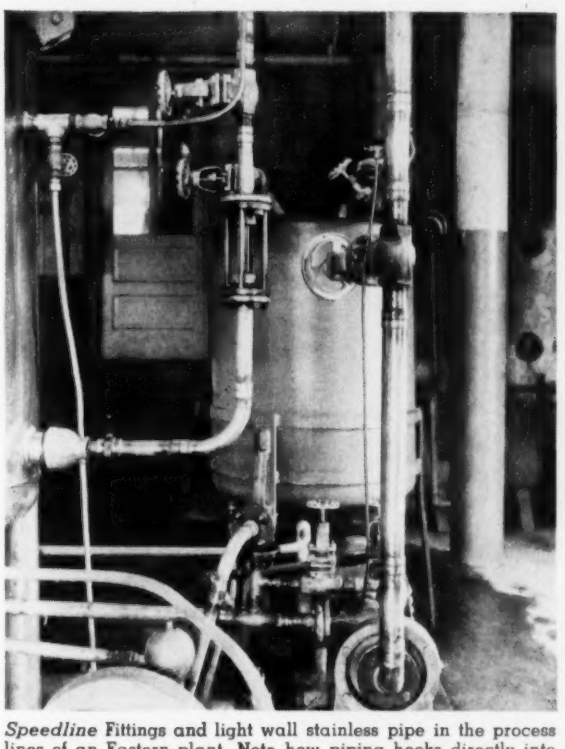
. . . chances are that it is the conventional Schedule 40. But this heavy wall is not needed in 90% of the cases. Light wall Schedule 5 pipe costs about half as much, and all sizes will easily withstand 150 p.s.i. working pressures. *Speedline* Fittings are specially designed for fast, low-cost installation of light wall stainless pipelines. And because light wall pipe of the same size has a larger inside diameter than heavy pipe, you gain 15% to 25% greater flow and capacity!

If you are now using Stainless Tubing . . .

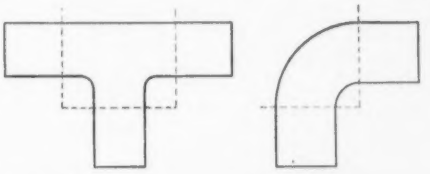
. . . the *Speedline* system offers real savings and advantages. It permits you to change to a light wall *pipe* rather than *tubing* size—at no increase in cost. And here's where you gain. Standard equipment like valves, pumps, sight gauges, etc., are made in *pipe* sizes—you hook right in without special adapters! And equally important, *piping* permits you to use the next lower dimension (for example, 1" Sch. 5 pipe has even greater capacity than 1¼" O.D. tube). This means that you can use smaller valves, flanges, and other accessories—an entire installation would be considerably lower in cost.

WRITE FOR THIS FREE BOOK

Just write a note on your company letterhead and we will mail the *Speedline* catalog to you. It shows why you get better results at less cost with *Speedline* Fittings.



Speedline Fittings and light wall stainless pipe in the process lines of an Eastern plant. Note how piping hooks directly into standard valves and sight gauges.



Look for the "Tangential Feature"

These drawings show a *Speedline* Tee and 90° Elbow. The dotted lines show the termination points of conventional fittings. The additional straight section of *Speedline* Fittings permits attaching of unions or flanges without fouling, reduces the number of welds required, and eliminates troublesome curved or angle joints. The tangential feature is common to all *Speedline* Fittings such as Ells, Tees, Crosses, etc.

Speedline distributors are located in principal cities from coast to coast

Speedline Corrosion-Resistant FITTINGS

—the newest thing in pipeline economy

Manufactured by **HORACE T. POTTS CO.** • 520 E. Erie Avenue • Philadelphia 34, Penna.

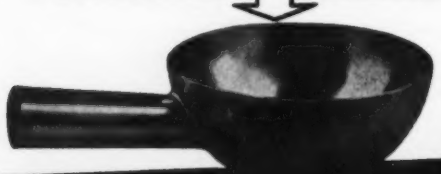
STAINLESS STEEL
SMALL WARE
FOR THE DYEHOUSE
Ruggedly Built for SEVERE SERVICE

Welded, reinforced construction gives Blickman small ware extra durability to withstand hard daily use in the busy dyehouse. For sizes and specifications send for our small ware circular.

STAINLESS STEEL PAILS
Built to take a beating. Welded construction for extra strength. Round corners for easy, thorough cleaning. Made of #18 gauge stainless steel for corrosion resistance. Ears are formed under rolled rim of the pail and transmit part of the load to the rim. Capacity to 20 quarts. Write for Bulletin 7028.

STAINLESS STEEL BUCKETS
Easy to clean. For extra strength quarter inch thick reinforcing bands are welded at top and bottom. Handles of ½ inch diameter mild steel rod are welded to upper reinforcing band. Round corner bottom speeds cleaning. Built of heavy gauge stainless steel. Capacity to 100 gallons. Send for Bulletin 7029.

STAINLESS STEEL DIPPERS
Made to withstand rough handling. Hemispherical bowl of #16 gauge 18-8 stainless steel with #16 gauge stainless tapered handle-socket welded on. Capacities 1 pint to 4 quarts. Handle of 4 quart size reinforced. Send for Bulletin 7030.



Write for further information

S. BLICKMAN, INC. 403 GREGORY AVE WEEHAWKEN, N. J.
Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

News About **SUPPLIERS** (Continued)

chines Corp., New York, has appointed John H. Temple to the newly created post of special representative for the textile industry. Charlotte, N. C., is his headquarters.

Jensen Specialties, Inc., Detroit, Mich., recently appointed Burton Zook sales manager for its line of industrial ovens and heating equipment.

Mellor Bromley & Co. Ltd., Leicester, England, has announced the formation of an associated American company: Mellor Bromley Group, Inc., 432 Fourth Ave., New York, N. Y.

Minneapolis-Honeywell Regulator Co., Philadelphia, Pa., has named R. Randall Irwin manager of personnel and industrial relations and O. B. Wilson industrial instruments sales manager for the Industrial Div. Frank Day, Vincent Lo Scalzo, and V. L. Evans have been assigned to field sales for the Valve Div.

National Ring Traveler Co., Pawtucket, R. I., has announced the retirement of Philip C. Wentworth, treasurer, after 33 yr. with the company. Frederic L. Chase, Jr., is now president and treasurer. The firm has also named T. Hill Ballard of Belmont, N. C., to its Southern selling organization. His headquarters will be in Charlotte, N. C.

Package Machinery Co., Springfield, Mass., has named Lewis A. Curtis its New York sales manager.

Page-Madden Co., Inc., Mineola, N. Y., has appointed Karl H. Inderfurth, Charlotte, N. C., its exclusive Southern agent.

Reliance Electric & Engineering Co., Cleveland, Ohio, has appointed Andrew C. Perrin West Coast district sales manager. Keith E. Carter, formerly a sales engineer in Pittsburgh, Pa., has been transferred to the Chicago office. Replacing Mr. Carter in Pittsburgh is J. Edward House, Jr.

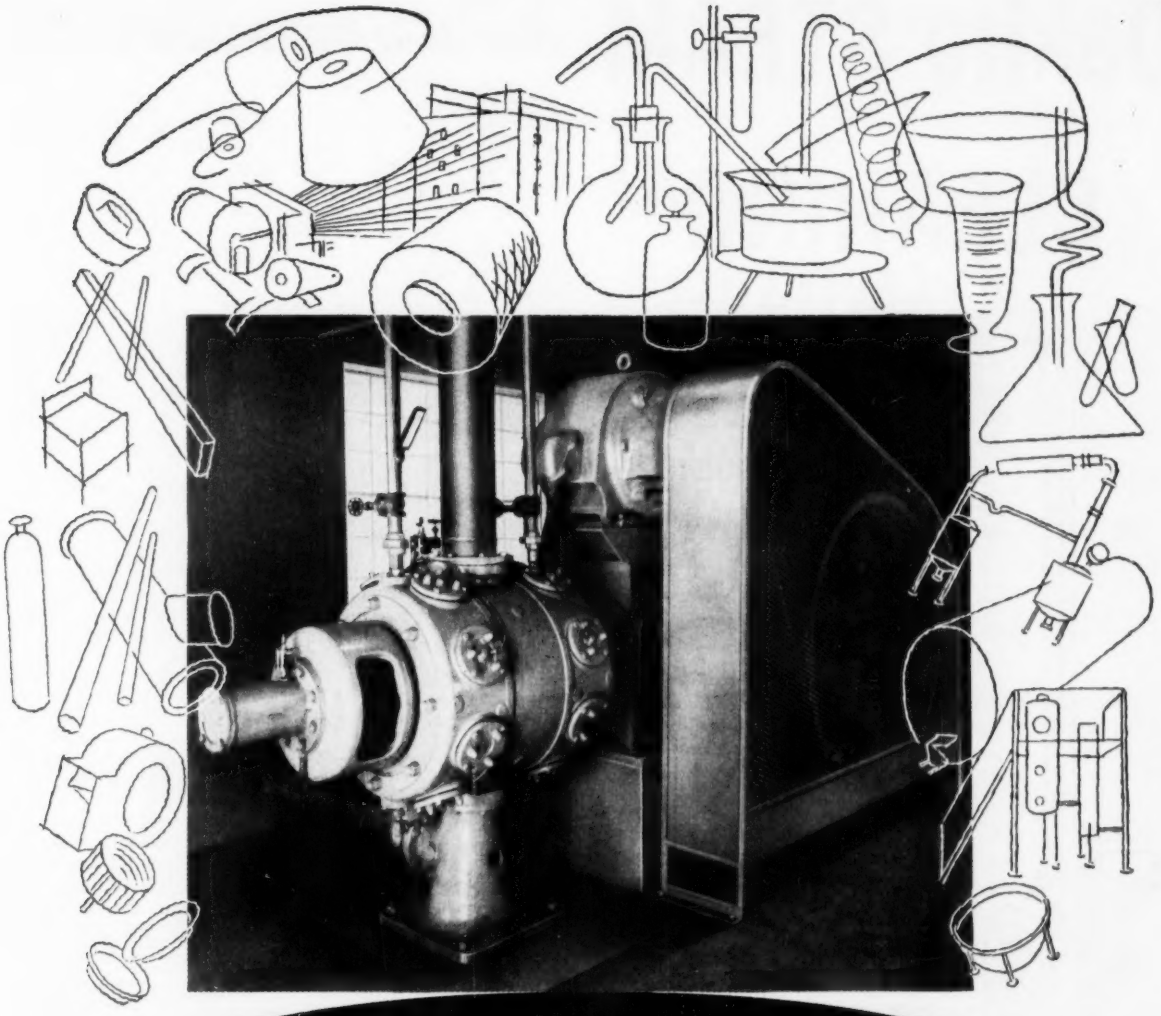
Rodney Hunt Machine Co., Orange, Mass., has appointed Jack W. Rembe sales manager. Langdon M. Phillips, previously field sales manager, has been promoted to assistant sales manager.

B. S. Roy & Son Co., Worcester, Mass., has bought a building at Linwood and 2nd Avenue in Gastonia, N. C., that will serve as the company's Southern plant. William P. Cooper, sales engineer in the South, has been put in charge as plant manager.

Saco-Lowell Shops, Boston, Mass., has completed plans for the expansion of its plant at Sanford, N. C. Work will begin immediately. With the completion of the expanded facilities at Sanford, the Company's repair and supply depot in Charlotte, N. C., will be moved to Sanford.

Scott Testers, Inc., Providence, R. I., has formed Scott Testers (Southern), Inc., Spartanburg, S. C., as the authorized source of servicing, repairs, supplies, and parts for Scott testing equipment in use in the Southeast. The new or-

LOUIS ALLIS, JR., (left) has been made a vice president of Louis Allis Co., Milwaukee, Wis. C. G. SKIDMORE, (right) succeeds him as vice president in charge of sales.



Protect Products

WITH CP OIL-LESS CYLINDER COMPRESSORS

If you use air for operating instruments or if you process chemicals, beer, food or other products where oil-laden air would be a detriment, you need a Chicago Pneumatic Oil-Less Cylinder Compressor.

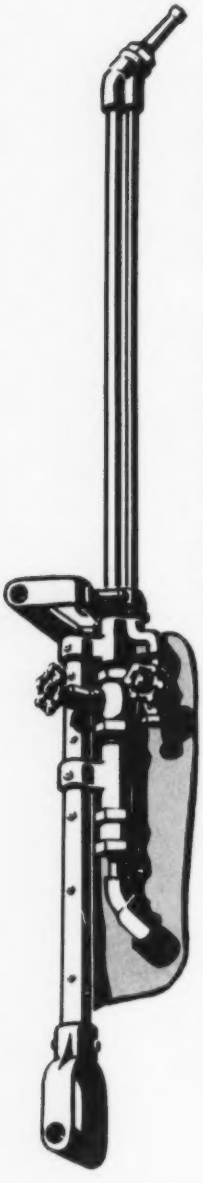
Available in three types, CP Oil-Less Compressors have carbon piston rings — need no oil or other lubricant. The Class T-BO illustrated above has a full-floating piston with an outboard crosshead. Piston weight is not carried by the cylinder wall or the carbon rings — rings act only as a compression seal against the hardened steel cylinder liner. A distance piece between cylinder and frame, and carbon piston rod packing prevent transmission of oil into the cylinder from the frame.

For more details, write for Bulletin 728 Supplement D.

CHICAGO PNEUMATIC TOOL COMPANY
8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

Oakite STEAM CLEANING



proves the best answer to low-cost equipment maintenance

Hooked up to your own steam supply, this scientifically designed Steam-Detergent Gun cuts cleaning time in half.

Gun gives you a powerful cleaning combination of steam force, heat, and detergent action. It's a grime-blasting mixture you can easily regulate merely by twisting a valve.

Oakite Steam-Detergent Cleaning eliminates costly hand scrubbing. It simplifies and speeds up cleaning . . . particularly around those hard-to-reach areas.

Mills report typical savings such as these:

- **Braiding machine now cleaned in place —time cut from 2 days to half an hour**
- **3½ hours cut off Diesel radiator cleaning time**
- **Dye vat cleaning costs cut from $25 to less than $10**

• • •

Use the Oakite Steam-Detergent Gun for stripping paint; for cleaning before rebuilding motors; for cleaning looms before overhaul. Descriptive folder of facts yours for the asking. Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

REG. U.S. PAT. OFF.

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

News About SUPPLIERS (Continued)

ganization will maintain a complete stock of factory-made parts and supplies. Its facilities include a machine shop. The establishment is under the direction of John Hargreaves.

The Selig Co., Atlanta, Ga., has named Simon Selig, Jr., executive vice president; Lyons B. Joel, first vice president; and Charles Pearl, second vice president. Lee L. Strasburger was appointed treasurer, and E. Clifford Lowry, secretary of the cleaning-specialties firm.

U S Bobbin & Shuttle Co., Lawrence, Mass., has transferred Milton F. Cooke, who formerly covered Connecticut for the company, to the Providence office. His new territory includes Fall River, New Bedford, Pawtucket, Providence, and certain other mills in Massachusetts.

Whitin Machine Works, Whitinsville, Mass., recently elected John H. Bolton, Jr., assistant treasurer of the company.

Chemical and Yarn Suppliers

American Cyanamid Co., Calco Chemical Div., Bound Brook, N. J., has promoted Hugh Puckett, former Southern district manager of the industrial chemicals division, manager of the specialty products department. Rupert W. Daniels has been appointed manager of intermediate sales.

American Viscose Corp., Philadelphia, Pa., has promoted John Wiggins from the district sales staff at Philadelphia to the general rayon-staple sales staff in New York. J. Raymond Murphy, Jr., who has been in the weaving division of TRD, Marcus Hook, Pa., will take Mr. Wiggin's place in Philadelphia. J. Reid Durbin is to head rayon-staple and tow sales, and John Reid will head up acetate sales at Charlotte, N. C. Mr. Reid succeeds Norman A. Cocke, Jr., who headed acetate sales until he became Charlotte district sales manager.

Buffalo Electro-Chemical Co., Inc., Buffalo, N. Y., has appointed John F. Shea, former Northeastern district sales manager, to the position of general sales manager, with headquarters in Buffalo.

Celanese Corp. of America, New York, N. Y., has announced the retirement of Harry Price, vice president of Celanese since 1945. He had 26 yr. of service with the company.

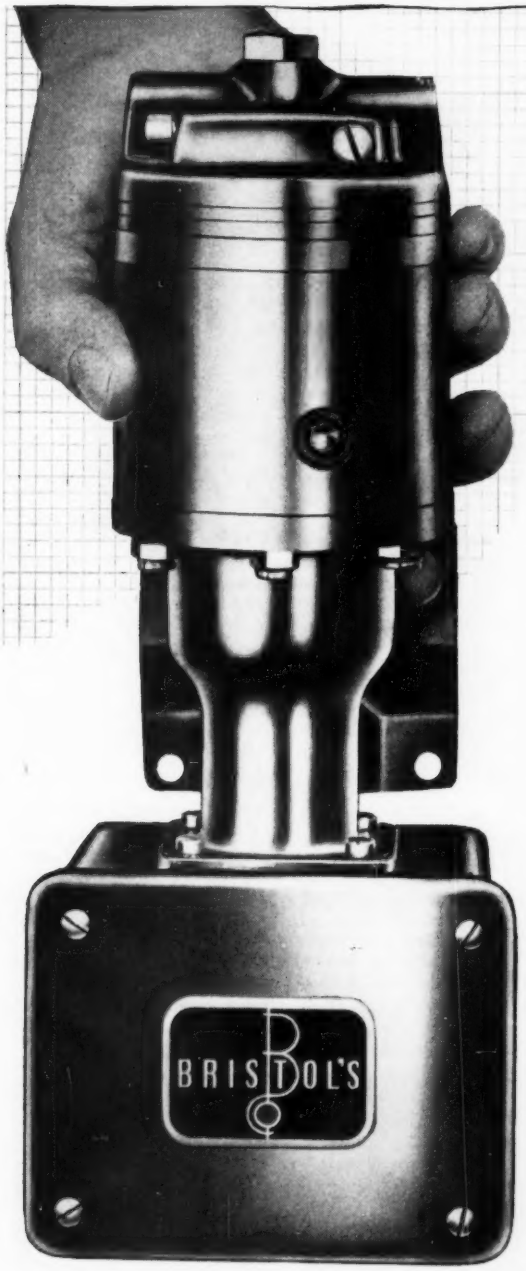
Chemstrand Corp., Decatur, Ala., has established a Southern sales office at Charlotte, N. C., headed by Masten R. Dalton. The new sales office is at 221 S. Church Street.

Courtaulds, Inc., and Lustre Fibres, Inc., New York, N. Y., have appointed A. M. Reed credit manager. Mr. Reed was formerly assistant treasurer of the North American Rayon Corp. and credit manager of the rayon-yarn division of Beaunit Mills, Inc., before he joined Courtaulds.

GEORGE A. GADE has been made vice president in charge of sales at Standard Pressed Steel Co., Jenkintown, Pa.

WILLIAM H. RAYE, JR., has been elected to the board of directors of Saco-Lowell Shops, Boston, Mass.

WHAT'S NEW AT BRISTOL . . . . WHAT'S NEW AT BRISTOL



New Bristol Series 650 PNEUMATIC TRANSMITTERS

for use with

BRISTOL MINIATURE RECORDERS, INDICATORS, AND CONTROLLERS

. . . give you these new advantages

● **THEY USE BRISTOL WORLD-FAMOUS MEASURING ELEMENTS—the measuring elements with wide-angle travel for positive action.** These are the same standard Bristol measuring elements that are used in Bristol Recording and Controlling Instruments. They are the result of over 60 years of experience in instrument making and application in practically every industry. Bristol measuring elements are recognized the world over for their accuracy, simplicity, and reliability. There are no better measuring elements made than Bristol measuring elements.

● **TRANSMITTING UNITS PROVEN TO BE ABSOLUTELY RELIABLE AND TROUBLE-FREE. They are very sensitive** to extremely small changes in the measured quantity, as little as 0.03% of range, including reversal. Superior control results from the use of a booster valve with output capacity of 3.0 scfm.

● **SIMPLE TRANSMITTING MECHANISM—frictionless operation**—only one pivot and no flexures—will operate in any position—is weatherproof and can be installed in any location, pipe-saddle or surface mounting.

● **AVAILABLE IN A WIDE SELECTION OF RANGES:** Pressure (0 to 5" water to 0-10,000 psi), vacuum (0 to 5" water to full vacuum), temperature (−100° F. to 1000° F.), liquid level (0 to 5" water and up), flow (mercury manometer, bell type, and Barton meter bodies), and differential pressure (0 to 2.0" water to 0-500" water). Suppressed ranges available. Over-range is standard, up to 500% for some ranges. Write for free bulletin No. A105. The Bristol Company, 103 Bristol Rd., Waterbury 20, Connecticut. 6.3.8.

LOOK FOR OUTSTANDING NEW DEVELOPMENTS FROM BRISTOL

BRISTOL

THE DEPENDABLE GUIDEPOST OF INDUSTRY

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

The Type S carries its own weight and it is self-supporting from a dollar-and-cents standpoint too. Since it shifts with the roll it ends the threat of misalignment, and is completely packless and self-lubricating besides. It's the ideal answer for many operating conditions, and pays its own way in the bargain.

Write for Catalog JS-3

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

- SPUR
- SPIRAL
- BEVEL
- WORM
- WORM GEARS

PRECISION makes more textile gears because PRECISION Gears have longer Accuracy. Simple, isn't it—yet, not easy! But, PRECISION gets a head start through superlative gear designing. Then, precision gear cutters (they're up-to-25 year men) and the finest machines take over. They cut "little giants" or electronic gears with proportionate skill. The "South's Largest Makers" means the South's most dependable gears. That's what PRECISION can give you for your next gear needs.

Engineers : Manufacturers — Cams : Bearings : Gears : Chain Drives

DIVISION OF TURNER MANUFACTURING CO.

PRECISION GEAR AND MACHINE CO.

Ph. 4-6857

2001 North Tryon St., Charlotte, N.C.

THE SOUTH'S LARGEST MANUFACTURER OF GEARS AND CHAIN DRIVES

News About **SUPPLIERS** (Continued)

Sandoz Chemical Works, Inc., New York, N. Y., has moved its New England offices and laboratory from Boston, where it has been for the past 18 yr., to new facilities at Hudson, Mass. The new site offers ample space for expanded operations in New England and will enable Sandoz to offer quicker distribution of its products and services.

Other Services

Beacon Management Counselors, Boston, Mass., has been formed to practice industrial management consulting work. Roger M. Allen and Loring W. Carney, both until recently with Barnes Textile Associates, Inc., have formed the partnership. With them is O. Thomas Austin, formerly with A. D. Juilliard & Co., Inc., to be in the Maine Div., and A. Frederick Allen, recently with M. T. Stevens & Sons, in the Boston office.

Clemson College, Clemson, S. C., recently held a two-day clinic, for the benefit of the South Carolina Assn. of Dry Cleaners, on the make-up and behavior of new fibers. Professor Joseph Lindsay, Jr., directed the clinic. Representatives of E. I. du Pont de Nemours & Co., Inc., and of Monsanto Chemical Co. were participants in the program.

E. I. du Pont de Nemours & Co., Inc., has announced a new $600,000 program, intended primarily to assist and advance the teaching of chemistry in American colleges and universities, that will begin next fall. Thirty-two institutions will receive new fellowships or grants for the next academic year. Grants have been made to 19 four-year private colleges to help them maintain their outstanding performance in the training of students majoring in chemistry. The company has also awarded postgraduate fellowships to 13 universities to improve the teaching of chemistry to undergraduates.

Fabric Research Laboratories, Inc., Boston, Mass., has announced that Kenneth R. Fox has become vice president and a member of the board of directors. He resigned his position as vice president and technical director of Burlington Mills Corp. Mr. Fox will be in charge of a newly created development group that will seek better use of laboratory product and process research findings and adaptation to the textile industry in a more useful fashion.

Arthur D. Little, Inc., Cambridge, Mass., has announced that Dr. Lawrence W. Bass has recently become associated with the firm. The company plans new, ultra-modern research facilities on the Concord Turnpike in West Cambridge that will be ready for occupancy by the end of the year.

J. ROBERT BONNAR was recently elected president of the American Assn. of Textile Chemists & Colorists for 1953. Mr. Bonnar is technical director of General Dyestuff Corp., New York, N. Y.

DR. EDWIN A. ROBINSON has been named a vice president of Nopco Chemical Co., Harrison, N. J. He will head the textile-fibers and textile-specialties departments in development and sales of chemical specialties.

"Buffalo"

Tips on AIR WASHERS

What AIR WASHERS Can Do For YOU

(while washing air)

1. CONTROL OF DUST, ODORS, BACTERIA

Air passing through a dense curtain of fine spray, then past scrubbing and eliminator plates, not only loses a large part of its dust particles and impurities with their accompanying bacteria, but odors are controlled.

2. COOLING

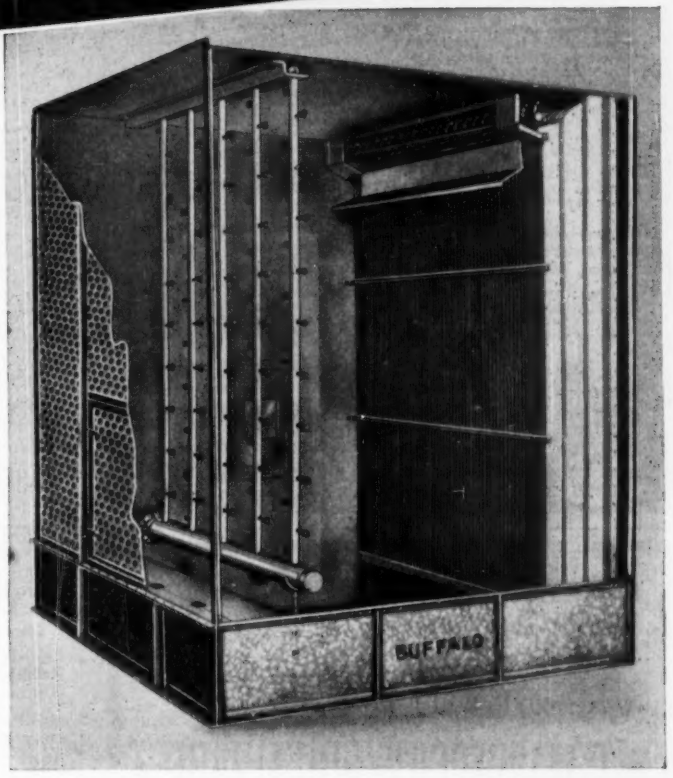
The spray action of the spray type washers has an efficient evaporative cooling effect.

3. HUMIDITY CONTROL

The spray type washers naturally have a strongly humidifying effect. Where less humidity is desired, wetted scrubber plates are used, as in "Buffalo" Static Washers for air cleaning. For demumidifying, "Buffalo" Type T Dehumidifyers have two banks of opposed sprays handling chilled water, to lower wet bulb temperature of the air.

4. DUST RECOVERY

Airborne particles washed and scrubbed out of the air are collected in a settling tank—for salvage, if valuable—or easily disposable if waste material.



"Buffalo" Type "A" Air Washer showing spray nozzles, flooded eliminator plates and settling tank. Note close spacing of eliminator plates at right, to present the maximum scrubbing surface. Plates are easily removable for annual painting, and the complete accessibility of all parts makes periodic maintenance simple and easy. 5 types of "Buffalo" Air Washers plus Wet Glass Cell Air Washers, are ready to solve *your* particular problem. Write for details.

WRITE TODAY!

For further data on the jobs air washers can do for your firm, write now for Bulletins 3181B and 3142C.

DIAMOND JUBILEE 75TH ANNIVERSARY

"Buffalo" FIRST FOR FANS

BUFFALO FORGE COMPANY

184 MORTIMER ST. BUFFALO, NEW YORK

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

VENTILATING | PRESSURE BLOWING AIR CLEANING | COOLING AIR TEMPERING | HEATING INDUCED DRAFT | FORCED DRAFT EXHAUSTING

BARNES SERVICE *Consulting Engineers*
TO THE TEXTILE INDUSTRY FOR OVER ½ CENTURY

We are pleased to announce the expansion of our consulting services to embrace:

PRODUCTION and INVENTORY PLANNING and CONTROL
SALES ANALYSIS and FORECASTING
SALES PLANNING and PROGRAMMING
SALES and OFFICE STANDARD PRACTICE INSTRUCTIONS
ORGANIZATION ANALYSIS PERSONNEL APPRAISAL

These services will be under the direction of Mr. Peter M. Fekula now affiliated with Barnes Textile Associates, Inc. They will complement our established consulting activities in the fields of general engineering, industrial engineering, cost and quality control, materials handling and industrial relations.

Mr. Fekula has had broad experience in a variety of industries in both consulting and operating capacities. Recently he completed an outstanding project for a well-known textile company which brought about close coordination of production and sales. He has been able to apply to textiles many of the principles which have proved so successful in the automotive and aircraft industries.

We will be pleased to give further information about the services rendered by our new Peter M. Fekula Division, as well as by our other departments.

Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.

★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods

Labormeter Burden-meter Waste-meter

Member: Association of Consulting Management Engineers, Inc.

BARNES TEXTILE ASSOCIATES, Inc.
10 HIGH STREET, BOSTON 10, MASS.
522 FIFTH AVE., NEW YORK 18, N. Y.
920-923 MONTGOMERY BLDG., SPARTANBURG, S. C.
European Agent, Ralph L. Hodara, 101 Reaumur, Paris 2

For Maintained Shrinkage-Perfect Finish—Long Life

HUYCK
COMPRESSIVE SHRINKAGE
BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the compressive shrinking process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information or see our representative

KENWOOD TEXTILE PRODUCTS

F.C. HUYCK & SONS
Kenwood Mills · Rensselaer, N.Y.

NEWS ABOUT Mills

Cotton Mills

American Thread Co., Sevier, N. C., has begun operations in its new plant. The mill has 600,000 sq. ft. of totally enclosed, air-conditioned space and provides employment for about 800 persons.

Belrug Mills, Inc., Greenville, S. C., has awarded a contract to Daniel Construction Co., Greenville, for a one-story addition that will cost about $200,000. Lineburger, Race, Forrester & Epting, Greenville, is the architect. The company has purchased Tumble Twist Mills, of Easley. No substantial change is contemplated at Tumble Twist at this time.

Bernside Mills, Gastonia, N. C., has been purchased by Trenton Cotton Mills, also of Gastonia.

Canadian Cottons Ltd., Montreal, Que., has purchased Raymills Ltd., Montreal. Raymills will now handle all gray goods up to 48 in. wide that are produced by the Canadian Cottons Ltd. rayon plant at Milltown, N. B.

J. & P. Coats, Inc., Pawtucket, R. I., and **Clark Thread Co., Inc.**, Newark, N. J., jointly owned for some time, have been merged into a new company, Coats & Clark, Inc.

Dominion Fabrics Ltd., Dunnville, Ont., recently began construction of an addition to its weaving department.

Florence Mills Corp., Rutherford County, N. C., and Greenville, S. C., has been dissolved, and the properties have come under the direct ownership of Cone Mills Corp., owner of the Florence Mills Corp. stock.

Gaffney Mfg. Co., Gaffney, S. C., plans to build a new supply room. The engineering department of Deering, Milliken Service Corp., Spartanburg, S. C., is in charge of the plans.

Lawtex Corp., Piedmont, Ala., has awarded a contract to Waldrop Dempsey, Piedmont, for a one-story addition. The cost is estimated to be $75,000.

Opp Textile Co., Opp, Ala., has resumed operations following a recent fire. Sixty new machines have already been installed and 45 more are expected to be installed in the near future.

Parkdale Mills, Inc., Gastonia, N. C., has completed the installation of a new refrigeration plant at its property on West Second Ave. The cost was $50,000.

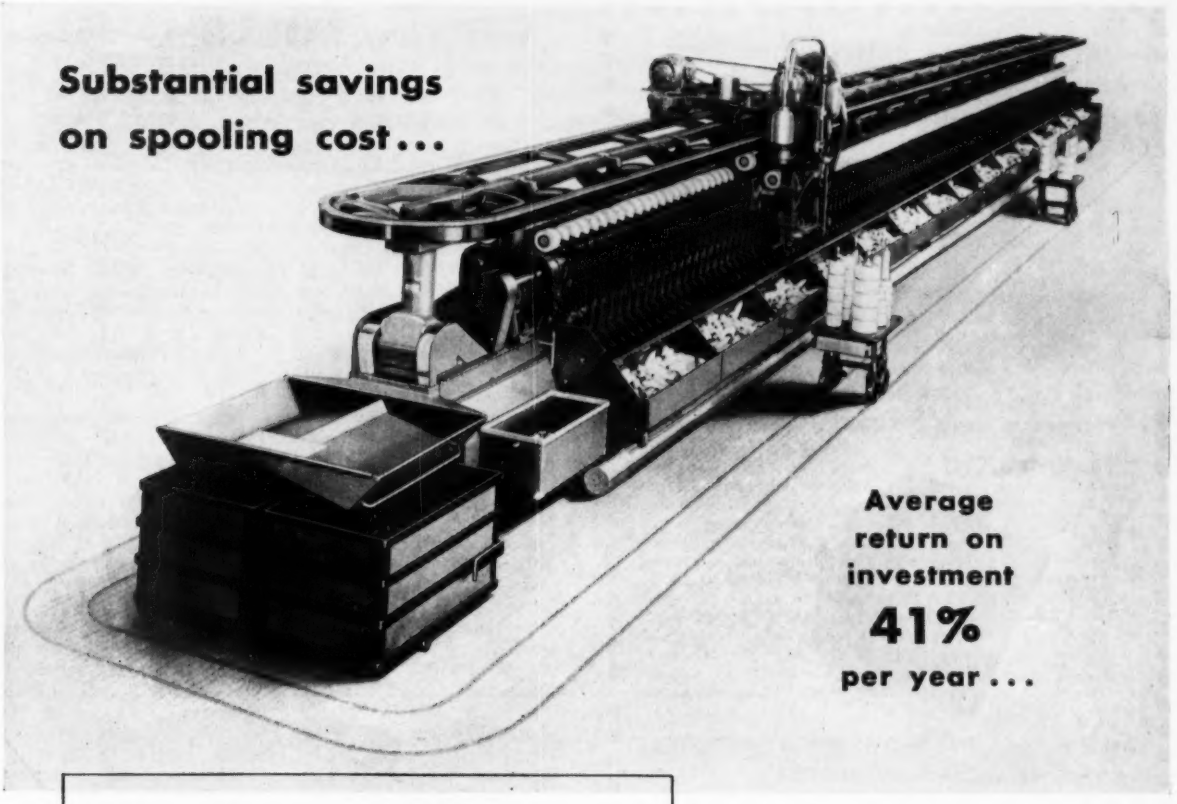
Pelzer Mills, Pelzer, S. C., plans to sell a major portion of the Pelzer village houses.

Selma Cotton Mills, a unit of Coated Products Div., Interchemical Corp., Selma, N. C., has been purchased by Selma Mills, Inc., a North Carolina corporation. Stanley W. Armitage will continue as manager of the plant, with John J. Ellis, Jr., as office manager.

Springs Cotton Mills, Lancaster, S. C., has placed an order with Draper Corp. for 120 additional 46-in. looms to supplement the production of work-clothing fabrics at its Gayle plant, Chester, S. C.

United States Rubber Co. has completed the transfer of consumer-fabric weaving operations from Burlington, N. C., to Winnsboro, S. C. During the summer the supervisory employees and directors of the textile division will move their offices from New York to Winnsboro.

Woodside Mills, Liberty, S. C., has its new dye plant in full operation. This mill now performs the complete operation for the production of fine combed chambrays.



Barber-Colman
AUTOMATIC SPOOLER

SPOOLERS AND WARPERS IN USE ABROAD

COUNTRY	SPOOLERS	WARPERS
Argentina	5	4
Columbia	8	8
England	41	28
France	48	21
Germany	38	22
Holland	16	13
India	12	10
Italy	15	7
Japan	10	9
Mexico	14	9
Sweden	10	7
Eight other countries	27	20
TOTAL	**244**	**158**

You can see from the above figure that the machine, which cuts spooling costs very materially, can pay for itself in about two and a half years. There are other benefits, too. By use of this machine, and its associated Super-Speed Warper, practically all spooler kinks are eliminated, weaver's knots are obtained, and the elasticity of the yarn is retained — all of which are of great benefit in the weaving. Also, loom stops, in a nine-year test, were shown to decrease by 25.44% and the average increase in weave room production was 1.25%. Since their introduction 30 years ago, Barber-Colman machines have earned very wide acceptance in the American textile industry . . . now their use (see list) is rapidly spreading into other textile-manufacturing countries.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. — GREENVILLE, S. C., U.S.A. — MANCHESTER, ENGLAND — MUNICH, GERMANY

INDIA
Batliboi & Company
Forbes Street, Fort
Bombay, India

MEXICO
J. Rabasa
Isabel la Catolica 45-913
Apartado 7348
Mexico D.F., Mexico

BRAZIL
Quimanil S.A. Anilinas
e Representacoes
Rua Glicerio 537/547
Caixa 5658 e 3431
San Paulo, Brazil

JAPAN
Nippu Trading Co., Ltd.
Toa Koshin Bldg.
3-Chome Kitahama Higashiku
Osaka, Japan

MIDDLE EAST
Arlind Corporation
65 Bedford Street
Stamford, Connecticut

People work better when they

SEE BETTER

MAGNI-FOCUSER helps Menders Fixers, Mechanics Knitters, Inspectors

Leaves both hands free to work

In the Durham Hosiery Mills

Lining up and spacing needles in a 51-gauge knitting machine — one of the many precision jobs that can be done better with a Magni-Focuser.

IN leading textile plants, Magni-Focuser — the binocular magnifier — reduces eye strain and prevents squinting — thereby speeding production, increasing accuracy and minimizing the chance of errors and accidents. Especially valuable in working on 60 gauge, 15 denier yarn. Restores the usefulness of the skilled hands of many older workers whose vision needs a seeing aid.

Prismatic lenses assure optical accuracy. Normal vision resumed by slightly lifting head. Used with or without eyeglasses. Order now for 10-day trial. Return if not satisfied. $10.50. Send for folder.

Edroy Products Co., Dept. W, 480 Lexington Ave., New York 17

Cable Address: "SEEBETTER"

EMPIRE
REG. U. S. PAT. OFF.
TEXTILE MILL CRAYONS
EMPIRE TEXTILE MILL CRAYON
Don't compromise on Quality---Get the BEST
By every standard of comparison EMPIRE Textile Mill Crayons are the BEST . . . The result of careful research and study they are the result of more than a century of experience by Crayon engineers . . . When marking COUNTS you can always COUNT on EMPIRE Textile Mill Crayons.
The American Crayon Company
Sandusky, Ohio
New York

News About MILLS (Continued)

Woolen and Worsted Mills

Abbott Worsted Co., Graniteville, Mass., will build a $2,000,000 plant near Seneca, S. C. The contract has been awarded to Daniel Construction Co., Greenville, S. C., with construction to be completed so that operations may start by June. The plant will manufacture fine worsted and synthetic-fiber yarns.

American Woolen Co. expects to begin production in its Tifton, Ga., plant in June. The company is currently installing machinery.

Ames Textile Corp., New York, N. Y., and **Ames Worsted Co.,** Lowell, Mass., have merged into a new corporation under the title of Ames Textile Corp. The personnel and methods of operation remain unchanged.

Artex Woolens Ltd. has purchased the 90-yr.-old mill of Rosamond Woolen Co. Ltd., Almonte, Ont. Extensive modernization has been done. Between 36 and 50 fully automatic looms will be placed in operation. Several new-type Rieter spinning frames are on order and will be installed in the near future.

Lawrence Wool Scouring Co., Lawrence, Mass., will operate a plant in the former E. Frank Lewis Co. building. Francis C. Rohmer, Needham, Mass., is the president.

James Lees & Sons Co., Bridgeport, Pa., has work under way on a new warehouse and factory branch at 5905 Grant Ave., Cleveland, Ohio. The general contract has been let to Leonard H. Krill Co., Cleveland. The estimated cost is $500,000.

Porritts & Spencer Canada Ltd., Hamilton, Ont., is constructing a one-story addition that will cost about $70,000. General contractor is H. H. James Kemp Construction Co., Hamilton. The architect is William R. Souter & Associates, Hamilton, and the consulting engineer is H. H. Angus & Associates Ltd., 615 Yonge St., Toronto.

Synthetics Mills

Allan Yarn Mills, Lenni Mills, Pa., has been changed from individual ownership and incorporated for $100,000. The incorporation is part of a 3-yr. expansion program.

American & Efird Mills, Inc., has made its subsidiary, Spun Fibers, Inc., Lenoir, N. C., a division of the parent concern. The plant will operate as Spun Fibers Worsted Spinning Div. There will be no change in administrative personnel or function.

Burlington Mills Corp. will build a brick and stone two-story addition to its plant on North Scales St., Reidsville, N. C. The addition will increase the efficiency of manufacturing, warehouse, and shipping operations.

Delaine Worsted Mills, a unit of Associated Spinners, Gastonia, N. C., recently completed construction of a new office building.

Dionne Spinning Mills Co., St. George de Beauce, Que., is nearing completion of a modernization program.

Fabrics & Laces Ltd., Montreal, Que., recently formed, is now producing novelty fabrics for the underwear and outerwear trades. The company also produces laces that are made of nylon, rayon, Orlon, and Dacron.

PEERLESS MILLS, a unit of Textron Southern, Belton, S. C., has constructed a new 165x280-ft. addition to its plant. The building, totally enclosed and air conditioned, provides space for 480 looms. Daniel Construction Co., Greenville, S. C., is the contractor.

OLE JED IS LIVING HIGH SINCE THE MILL SUPER STOCKED THEM FULLERGRIPT CARD BRUSHES IN THE STORE ROOM
SURE IS. NO MORE SORE BACK LIFTIN' THEM CORES OUT'N THE CARDS AND HE FISHES EVERY WEEK END NOW. HE HAS SMALL EYES FOR ENY CARD BRUSH BUT FULLERGRIPT THAT HE CAN CHANGE WITH A SCREWDRIVER

CLEANER COTTON AT LESS EXPENSE

Pre-formed, Metal-back Fullergript Brush Strips Installed between Shifts

Once the tufts have been removed from your cores, replacement with FULLERGRIPT triple-dense longer-life brush strips is simply a matter of loosening and tightening screws.

FREE TECHNICAL HELP.

Simply write and tell us the type of your cards, the length and diameter of cores, and whether spiral is right or left hand. We shall send quotes and complete installation blueprints. Write today.

INDUSTRIAL DIVISION • 3594 MAIN STREET • HARTFORD 2, CONN.

Fuller BRUSH CO

POWER DRIVEN BRUSHES • FLOOR AND SPECIAL BRUSHES • WET AND DRY MOPS • BROOMS • WAXES AND POLISHES

WORLD-FAMOUS

SCHLUMBERGER COMB

for French-Type Worsted Mills

OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

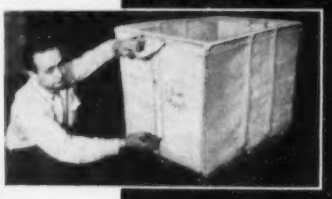
U. S. and Canada Representative: TEXPLANT CORP., 65 Bedford St., Stamford, Conn.

N. SCHLUMBERGER & CIE

GUEBWILLER, ALSACE, FRANCE

Founded 1808

LANE BASKETS ARE MATERIALLY BETTER



Here's Why

- Over-size casters for easy running of any load
- Full capacity bodies
- Hardwood bottoms—dual riveted—stronger than steel
- **Heavy duck sleeves for holding body to frames**
- Rounded bottom rivets for smooth surfaces
- Self-embedded rivets in duck prevent sharp cutting edges

Heavy-duck sleeves for holding body to frames is a feature you'll always find in every Lane basket. Lane deeply embeds short stitches into these heavy weight canvas sleeves and the body to give you maximum wearing strength where it is needed most.

And Lane goes one step further, all sleeve edges are turned under to prevent any possible unraveling.

Investigate Lane baskets, hampers and trucks today and see for yourself why Lane is the standard of quality.

WRITE for bulletin.

TRADE MARK

Lane

THE LANE BASKET

W. T. LANE & BROS., INC. Poughkeepsie, New York

STEAM

FOR HEAT OR PROCESS

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 318

Factory: Emmaus, Pa.

Exec. Offices: Times Bldg., Times Sq., New York N. Y.

Superior STEAM GENERATOR

News About **MILLS** (Continued)

Hess, Goldsmith & Co., Wilkes-Barre, Pa., has received a building permit to construct a two-story addition to its plant on North Pennsylvania Ave. The new building will be used for shipping facilities.

Holly Mills, Inc., has been formed at Laconia, N. H., to operate the combined facilities of Holly Mills, Mt. Holly, N. C., and Guild Mills Corp., Laconia, N. H. The new corporation expects to increase the number of employees at both mills.

Luray Textile Div. of Schwarzenbach-Huber Co., Luray, Va., is installing additional throwing equipment to handle nylon and Orlon.

National Weaving Ltd., Dunnville, Ont., recently began work on an addition to its main building on Pine St. The new building is 90x65 ft., one story, of concrete-block construction.

Phoenix Div. of Beaunit Mills, Statesville, N. C., has converted its operations to the manufacture of Velon. L. M. Flowers has been appointed plant superintendent, succeeding Fred Heilbrunn, who has been directing the conversion of the mill.

Verney Corp. of Canada Ltd., Granby, Que., has acquired Master Prints Ltd., Lachine, Que., and is transferring all printing equipment to its plant at Granby.

Knitting Mills

Avalon Hosiery Ltd., Montreal, Que., is now producing about 12,000 prs. of full-fashioned nylon hosiery weekly. The installation of additional machinery and equipment will shortly increase production by 40%. The company is headed by Ben Milner.

Berks Textiles, Inc., Reading, Pa., has combined its two plants at West Reading and Hyde Villa in its West Reading plant. Shipping and finishing operations will be carried on at 216 Kline St., West Reading. The company will install several 66-gauge full-fashioned knitting machines to replace older equipment that has become too costly to run.

Champagne Knitting Mills, West New York, N. J., has been incorporated by Louis L. Cronson.

Clinton Hosiery Mills Ltd., Clinton, Ont., is now operating its new plant in New Hamburg, Ont. Knitting machinery and equipment have been installed. E. A. Holyer, formerly in charge of the men's division of Holeproof Hosiery is in charge of operations at both the New Hamburg and Clinton plants.

Cooksville Hosiery Mills, Inc., Vale, N. C., has been incorporated. It has an authorized capital of $100,000. Voyt R. Rudisil, Pauline R. Rudisil, and C. E. Rudisil, all of Vale, are the incorporators of the new plant.

Dar-Non Hosiery Mills, Inc., Charlotte, N. C., has been incorporated with an authorized capital of $200,000. The principals are Francis Fairley, Louise C. Deese, and Coline D. Helvenston, all of Charlotte.

Fairview Hosiery Mills, Hickory, N. C., has been chartered with an authorized capital of $100,000. Construction has been started on a new building. Knitting machines and other mechanical equipment necessary to produce finished hosiery have been purchased. Production is expected to be started soon.

TEXTRON SOUTHERN is building a new synthetic-weaving mill adjoining its plant at Williamston, S. C., to increase manufacturing capacity.

FOR KNITTING OR WEAVING

Insist on

AMERICAN & EFIRD YARNS

AMERICAN DURENE®
As advertised in leading magazines

NATURAL YARNS
Combed Peeler or Sak, 10's-90's Single
Combed Peeler or Sak, 10's-100's Ply
Carded Peeler, 8's-30's Single

THREAD DIVISION
LAWRENCEBURG, KENTUCKY

AMERICAN & EFIRD MILLS, INCORPORATED
Mount Holly, North Carolina • W. H. SUTTENFIELD, Vice-President and Sales Manager
Successors to American Yarn & Processing Company and Efird Manufacturing Company

MOUNT HOLLY, N. C.
Mr. C. E. Wood
Miss E. R. Abernathy
Mr. T. J. Davis

HIGH POINT, N. C.
Mr. E. J. Holbrook

CHATTANOOGA, TENN.
Mr. H. W. Davenport
728 James Bldg.

BOSTON, MASS.
Mr. L. T. Howick
222 Summer Street

PHILADELPHIA, PA.
Mr. Wm. Montgomery
3701 N. Broad Street

ALBEMARLE, N. C.
Mr. A. K. Winget

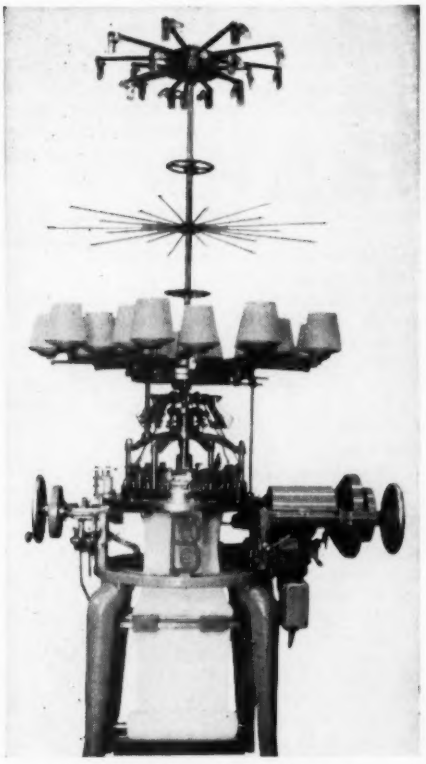
CHICAGO, ILL.
Wood & Hutchinson
222 W. Adams Street

GASTONIA, N. C.
Mr. T. C. Smotherman

NEW YORK, N. Y.
51 Madison Avenue

ANNISTON, ALA.
Mr. Horace Frierson

ALSO SYNTHETICS AND WORSTED YARNS



STANDARD EQUIPMENT
BRINTON MACHINES

IT PAYS TO USE WESCO
ELECTRIC STOP-MOTIONS
FOR OUTERWEAR • UNDERWEAR • HOSIERY
STANDARD THE WORLD OVER

Team work that pays off in greater profits, by increasing production (on any machine) through the elimination of unnecessary press-offs, knitting breakdowns, broken needles and wasted yarns. Always *specify Wesco Stop Motions* for trouble free production.

LOOK FOR "WESCO" ON ALL THESE KNITTING MACHINES:

H. Brinton Co.
Charles Cooper Co.
Crane Manufacturing Co.
Edmos Products Corp.
Fidelity Mach. Co., Inc.
Jacquard Knitting Mach. Co.
Lamb Knitting Machine Co.
Leighton Machine Co.
Ordnance Gauge Co.
Scott & Williams, Inc.
Stafford & Holt, Inc.
Supreme Knitting Mach. Co.
Wildman Mfg. Co.

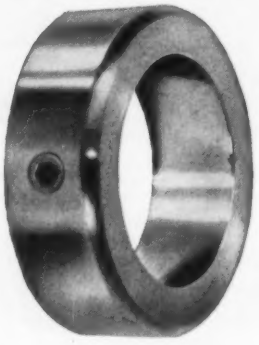
STOP-MOTION DEVICES CORP.

1471-77 Fulton St. **Brooklyn 16, N. Y.**
Another of a Series of Knitting Machine Builders, Others to follow

standardize on standard

HALLOWELL®

SOLID STEEL COLLARS



Buy standardized, precision-made HALLOWELL Steel Collars from your distributor's stocks. You'll save time and money by picking up the telephone and placing your order. Deliveries are prompt.

42 stock sizes—for shafts from $\frac{3}{16}$" to 3" diameter, inclusive—all positively positioned on the shafts by UNBRAKO Self-Locking Socket Set Screws, the screws that won't work loose.

Write for literature, and the name and address of your nearest HALLOWELL industrial distributor. SPS, Jenkintown 35, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS

JENKINTOWN PENNSYLVANIA

Laminated

BEAM BARRELS

3 and 4 Grooves

5 and 6 in. Diameters

Representatives:
Coleman Co., Inc.
Greenville, S. C.

•

Roy Schrimshire
P. O. Box 906
Columbus, Ga.
Tel. 3-3916

The laminated construction of Specialty Hardwoods' loom beam barrels assures square shoulders, lasting straightness and years of satisfactory service.

- RESIN BONDED LAMINATED HARDWOOD BARRELS.
- STEEL SHAFTS—PINNED TO BARREL—NEVER WORK LOOSE.
- SHAFTS TURNED TO WITHIN .005" TOLERANCE.

AVAILABLE IN CLEAR OR GRAY LACQUER FINISH.

SPECIALTY HARDWOODS, INC.

P. O. BOX 1351 GREENVILLE, S. C.

News About MILLS (Continued)

Fairview Knitting Mills, Brooklyn, N. Y., has installed four new Dubied CAL machines. The mill is also equipped with a battery of 14 additional flat-bed links-and-links machines.

Florida Knitting Mills, Inc., plans to erect a building on West Central Ave., Orlando, Fla., for the manufacture of fine-grade nylon-mesh gloves. H. R. Broleman, Jr., Orlando, is the architect.

Gilman Hosiery Mills, Franklin, N. H., has been sold to Lawrence J. Gauthier by its owner, Wiggin S. Gilman. Mr. Gilman will assist in the operation of the mill for a year.

Glenayr Knitting Co., Lanark, Ont., has begun construction of a new building at the rear of its present structure. When completed it will house the dyehouse. The space in the main mill will be used for the expansion of the knitting department.

Globe Knitwear, Inc., Philadelphia, Pa., will soon move to new quarters at 831 Arch St.

Knit Goods Specialty Co., Chicopee Falls, Mass., is expanding its sewing operations in a new plant at Bennington, Vt.

Lion Knitting Mills, Cleveland, Ohio, has completed a new warehouse. A new shipping room will be added.

Lorane Knitting Mills, Lorane, Pa., has moved its equipment into a building at Heister Lane and Belmont St., Reading, Pa., that has been occupied by Penn Maid Hosiery Mills, Inc.

Main Knitting Mills Ltd., Montreal, Que., has completed an addition to its plant and has installed new machinery and equipment.

Mercury Mills Ltd., Hamilton, Ont., has been authorized by the Ontario government to acquire land valued at $2,000,000 in Ontario, to be held in mortmain for a period of 15 yr.

Monarch Knitting Co. Ltd., Dunnville, Ont., has sold its woolen-spinning plant at 52 St. Lawrence St., Toronto, to Textile Sales Ltd. The sale was made to accelerate the expansion of other Monarch plants. Monarch recently transferred the operation of its Joseph Simpson plant to Dunnville and other plants.

Natalie Knitting Mills is moving to a new location in Hamilton, Ont. It has sold its plant on John St., E. Whitby, Ont.

National Hosiery Ltd., Hamilton, Ont., has installed 32-section full-fashioned knitting machines for 66-gauge hosiery.

Rockwood Mills, Rockmart, Tenn., is installing new automatic knitting machines as the first step in its improvement program. The company's box factory is being removed to the basement to make room for new knitting equipment.

Sanson Hosiery Mills, Corinth, Miss., has had a $47,000 addition to its plant erected under a BAWI bond issue. The company's mill in Sevierville, Tenn., has concluded arrangements with the city to build a large addition to the mill. The municipality has authorized a bond issue to finance the construction.

Sharnay Hosiery Mills, Philadelphia, Pa., is installing new 66-gauge full-fashioned-hosiery knitting machinery as part of the company's expansion program.

Skyland Textile Co., Statesville, N. C., plans to double its plant.

Southern Knitwear Mills, Inc., Charlotte, N. C., has let a contract to Frank H. Connor Co., Charlotte, for a new one-story mill on North Davidson St. Sloan & Wheatley, Charlotte, is the architect.

Spencer Mfg. Co., Spencer, W. Va. has work under way on a $100,000 addition that will measure 150x108 ft.

Vaughan Knitting Co., Pottstown, Pa., has been chartered to manufacture hosiery and knit goods in Virginia, with its principal office situated at Wytheville, Va.

Waldensian Mills, Valdese, N. C., is building a new box factory on St. Germain St. The building is 100x180 ft. of brick and glass construction.

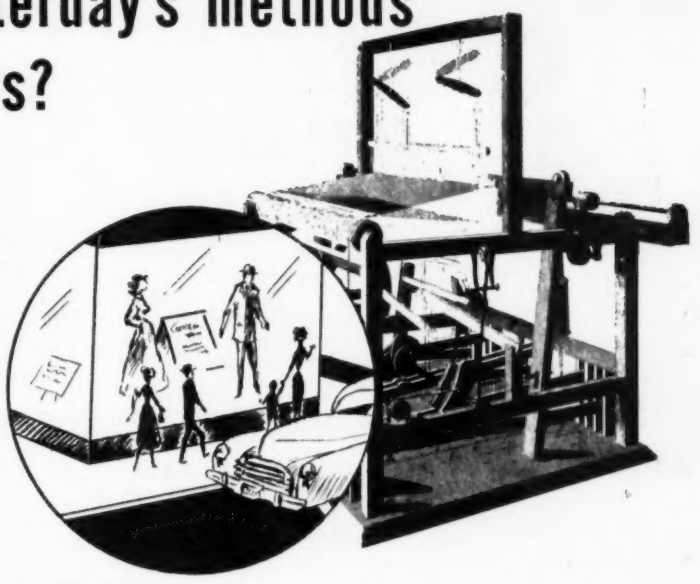
are you using yesterday's methods for today's markets?

Not in your shop... but in your *shipping department?*

Old shipping methods for textiles are out of place in today's merchandising picture, which demands efficient long-distance shipping at reasonable cost. Shipping delays and excessive charges can be ruinous to the textile manufacturer and the retailer. That's why National Carloading Corporation has instituted its "Operation Textile"... the expedited shipping service to the West Coast from Southern and New England mills as well as Eastern sales centers.

By using "Operation Textile" you gain competitive advantage through *faster* service and low shipping costs. Call us today for the facts!

WRITE FOR FREE LITERATURE, or call your nearest National Carloading station



NATIONAL
The Best Way
N

A COMPLETE TRANSPORTATION SERVICE

National Carloading Corporation

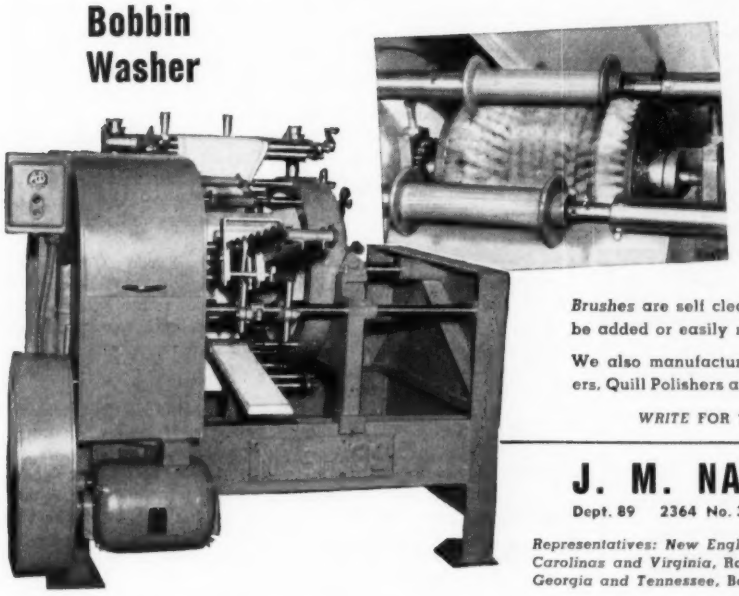
JUDSON-SHELDON DIVISION • JUDSON FREIGHT FORWARDING DIVISION
19 RECTOR STREET, NEW YORK 6, N. Y.
Serving 30,000 communities through more than 150 stations in the U. S. and agents in principal foreign countries.

WASH FLANGED BOBBINS

at 28 per minute with the

No. 89 NASH AUTOMATIC

Bobbin Washer



This remarkable Nash machine is saving time and money for textile mills throughout the country. It's a ten-spindle machine that *does the entire washing and wiping operation* automatically from start to finish . . . eliminates the time and extra expense of hand washing. No dirt is left on bobbins to soil yarn on the finished fabric. The cleaning solution has no harmful effects on yarn, either natural or synthetic . . . has a 140-degree flash point and is not toxic, assuring safe operation.

Brushes are self cleaning . . . brush sections may be added or easily removed for different bobbins.

We also manufacture Automatic Bobbin Refinishers, Quill Polishers and special-purpose machinery.

WRITE FOR TECHNICAL BULLETINS

J. M. NASH COMPANY

Dept. 89 2364 No. 30th St., Milwaukee 10, Wisconsin

SPECIAL FINISHING MACHINES · SINCE 1890 · NASH

Representatives: New England States, J. A. Christensen, Concord, Mass.; *Carolinas and Virginia,* Ralph Gossett & Company, Greenville, S. C.; *Georgia and Tennessee,* Belton C. Plowden, Griffin, Georgia

give YOUR product
the ZING
that SELLS!

Let Heineman process your nylon, silk and rayon yarns—and enjoy a reputation for handling *quality* products.

With a background of more than half a century of experience behind us, we believe we can contribute much to *your* continued success. May we serve you?

"Better today—as always!"

OSCAR HEINEMAN CORPORATION

Division of Avtex Industrial Corporation

DONALD G. BREWSTER, *President and General Manager*

2701 ARMITAGE AVENUE, CHICAGO 47, ILLINOIS

BRANCH: CONCORD, N. C.

SALES AGENTS

C. D. GOTT COMPANY • 1001 PROVIDENT BLDG. • CHATTANOOGA, TENNESSEE

THOMAS C. ASSHETON CO. • 11 WEST FORTY-SECOND STREET • NEW YORK 18, N. Y.

FRANK LUNDAY • P. O. BOX 1154 • CHARLOTTE, N. C.

CREATED FOR THE TEXTILE INDUSTRY

the DUROMETER

FOR TESTING WINDING DENSITY

Created to solve the problem of maintaining uniform density for unwinding in later processes, the DUROMETER saves time and money. Tests density of windings on spools, cones, bobbins, cops and package dyeing tubes.

Write today for bulletin R-8

Shore INSTRUMENT & MFG. COMPANY, INC.
90-35 VAN WYCK EXPRESSWAY, JAMAICA 35, N. Y.

MILTON
NYLON & RUBBER YARN
BEAMS

MILTON aluminum alloy Tricot and Section Beams feature CONTINUOUS WELDED CONSTRUCTION

Drop-forged, heat-treated aluminum alloy heads and extra heavy barrels withstand pressures of nylon and rubber warps.

WRITE FOR FREE BULLETINS

No. 45-B (Steel Beams) No. 49-A (Light Metal Beams)

MILTON MACHINE WORKS, INC.
MILTON • PENNA.

News About MILLS (Continued)

Glass Fabrics Finishing Co., Cedar Grove, N. J., has completed a new building that will be used for the finishing and printing of glass-fiber textiles.

Loom-Tex Mill, Martinsville, Va., recently reopened. New machinery and equipment have been installed. The company is engaged in printing.

Miscellaneous

Gem, Inc., Byhalia, Miss., has been granted a loan of $100,000 by R.F.C.

Granby Elastic & Textiles Ltd., Granby, Que., has completed the foundation of its plant addition. General contractor is Carolus Marquis, Granby. The cost is estimated at $30,000.

Lowndes Products, Inc., Greenville, S. C., has been granted a South Carolina charter with $100,000 capital to manufacture fiber plastic and related products. William Lowndes, Jr., president and treasurer of Southern Weaving Co., Greenville, is also president and treasurer of the new firm. Anna H. Lowndes is assistant secretary; William Lowndes, III, is the vice president; and F. T. Huguenin, is the secretary and assistant treasurer.

Standard Tytape Co., Asheboro, N. C., has purchased a five-acre plant site at Hendersonville, N. C., and plans immediate construction of a plant to which its operations will be moved. It is hoped to have the plant ready for occupancy by April 1. The plant and equipment will represent an investment of about $300,000.

Foreign Mills

Arignanabo Co. of Jamaica Ltd., Kingston, Jamaica, a new spinning, weaving, and finishing plant, recently began operations. The finishing equipment came principally from H. W. Butterworth & Sons Co.

Calzificio Paolo Santagostino, a hosiery producing firm located near Milan, Italy, has ordered a number of machines from Hemphill Co., Pawtucket, R. I. The company plans to increase production by 36,000 pr. of hosiery per day.

Compania Anonima Telares de Caracas, Caracas, Venezuela, is modernizing its cotton mill. Werner Textile Consultants, New York, N. Y., is in charge of the project.

Cooperative Wholesale Establishment, P. O. Box 990, Colombo, Ceylon, is receiving bids for machinery to be installed in a cotton mill. The mill will have spinning, weaving, and finishing departments.

Dougherty Cordage Co., Caracas, Venezuela, has set up a plant to produce twine and rope from sisal that is locally grown.

Florianopolis Textil, Estreito, Florianopolis, State of Santa Catarina, Brazil is planning to establish a wool textile plant in Estreito.

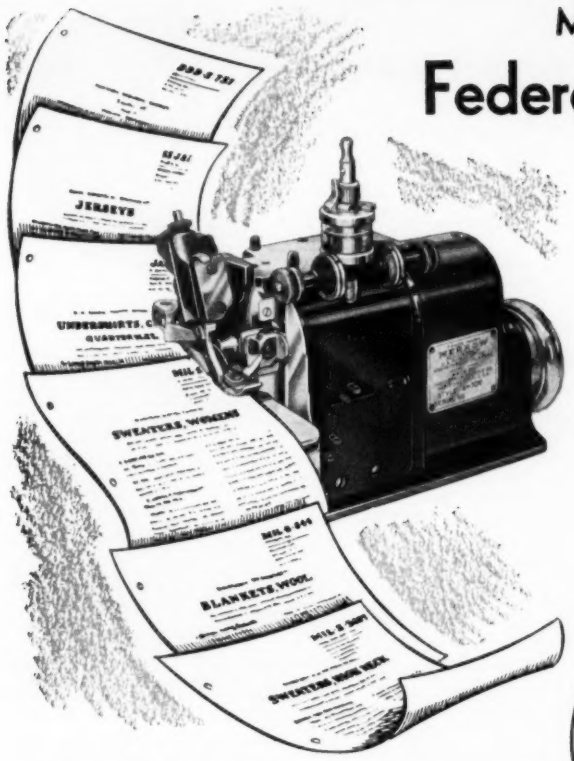
Industries Textiles de Colombia Ltd., Colombia, S. A., is replacing its present machinery with American-made machines. An order has been placed with Southern Mills Supply Co., Athens, Ga.

Santarem, State of Para, Brazil—Local interests are reported to be erecting a plant here for the spinning and weaving of jute.

Tecelagem Iracems, Santa Barbara do Oeste, São Paulo State, Brazil, wool manufacturers, recently began operations in their new mill.

Toyo Rayon Co., Shiga, Japan, has installed 24 continuous-rayon spinning machines. The machines were purchased from Kuljian Corp., Philadelphia, Pa.

Youghal, County Cork, Republic of Ireland—A new mill for producing cotton yarn was recently opened here. Up-to-date American and British machinery has been installed. The plant is the sixth in a group of textile mills lately set up in Eire.



MERROW MACHINES MEET

Federal stitch specifications

The Merrow Machine Company and its distributors are prepared to assist in interpreting and complying with specifications for items requiring 501, 502, 503, 504, and 505 stitch types.

Overedging, overseaming and hemming have been Merrow specialties for years and the "500 class" stitches are all of the overedge type. Thus you can depend on the Merrow "know-how" as you can depend on the Merrow Machine.

Write today for further information regarding the Merrow line — or send swatches of your fabrics for a demonstration of the work of these machines.

TRADE MARK REG.

The MERROW MACHINE COMPANY

ESTABLISHED 1838 INCORPORATED 1898

2803 LAUREL STREET • HARTFORD • CONN.

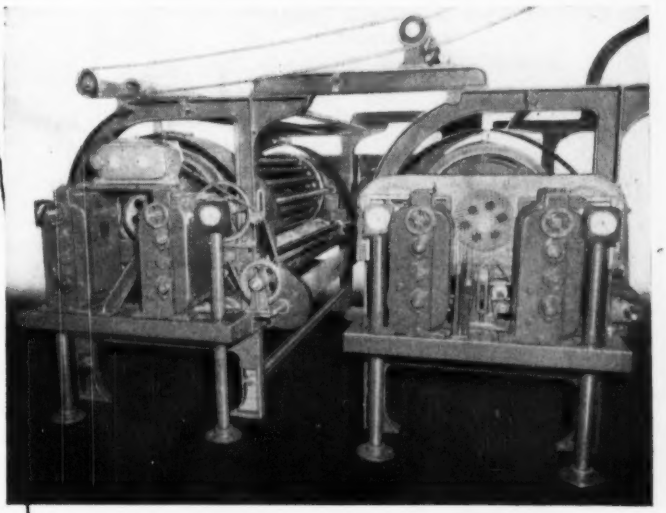
DISTRIBUTORS IN PRINCIPAL TEXTILE CENTERS

Tandem Double Acting Napper Doubles Your Napping Production

Operating as one machine, the two units of Gessner's Tandem Double Acting Napper double your napping production and improve napping quality.

Energy indicators, widely acclaimed as a Gessner development, give the operator precise control over the napping energy on both cylinders of this Tandem Napper at one time. The positive drives of the napper rolls with means for synchronizing the cloth feed between cylinders, extend this precise control to a very fine adjustment of cloth tension.

Please inquire further about the Tandem Napper — another Gessner machine to help you maintain a higher standard of cloth finishing



DAVID GESSNER CO.

WORCESTER, MASSACHUSETTS

Canadian Representative:

W. J. Westaway, Montreal, Quebec; Hamilton, Ont.

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

UTICA Combination Winding and Cutting Machine

1 machine does the work of 2

THIS fast-producer has all the advantages of two machines, but uses the floor space of just one. Cuts light, medium, or heavy weight, both straight and bias fabrics. Cutter and Winder can be run at the same time. Rigidly constructed for long, trouble-free operation. Has measuring scale for cutting accurate rolls. It's safe — knife, grinding wheel, all gears and sprockets are well-guarded. Equipped with Veeder Root yardage counter. Made in 40, 45, and 55 inch width machines. Make your own bindings — as you need them — from the same material as your product — at lower cost. Write today.

UTICA

NOVELTY AND MILL SPECIALTY CO.

2145 DWYER AVE., UTICA 2, NEW YORK

Builders of Textile Machines Since 1903

THE OLDEST AND LARGEST MANUFACTURERS OF

Ring Spinning and Twister Travelers

In the UNITED STATES

American • Hicks • Wilson

United States Standard

Wentworth Double Duty and Gravity Travelers

MAKES STRONGER YARN

National-Ekartnap Finish
New Chemical Treatment

Write Us

National Ring Traveler Company

PHILIP C. WENTWORTH, Treas.
354 Pine St., Pawtucket, R. I.
P. O. Box 1563, Providence, R. I., Charlotte, N. C.

"YOU CAN COUNT ON WAK COUNTERS"

They are
RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

NEWS ABOUT *Men*

Julius W. Abernethy, executive vice president of Mooresville Mills, Mooresville, N. C., has been named chairman of the board. He succeeds **Robert Lassiter. Gordon G. Matheson** has been elected executive vice president.

Ernest J. Allard, former overseer of full-fashioned knitting at Sulloway Mills, Franklin, N. H., is now with Strutwear, Inc., Minneapolis, Minn., in a similar capacity.

F. A. Alter has been named overseer of dyeing for Halifax Corduroy Ltd., Montreal, Que.

H. T. Amon, Jr., has been named supervisor of special activities for the Industrial Relations Dept. of Callaway Mills Co., LaGrange, Ga.

Raymond J. Austin has resigned as controller of Burlington Mills Corp., New York, N. Y. **Henry Rauch,** controller of Burlington Mills in Greensboro, S. C., has temporarily assumed Mr. Austin's duties.

Stanley F. Banas has resigned as director of costs and budgets at Wamsutta Mills, New Bedford, Mass., to accept the position as controller of Susquehanna Mills, Sunbury, Pa.

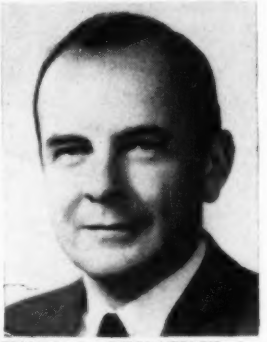
John P. Baum has been named assistant executive officer of M. T. Stevens & Sons Co. Mr. Baum will assist **Abbott Stevens,** executive officer. They will make their headquarters in North Andover, Mass.

C. G. Bishop, superintendent of the Textron Southern plant at Honea Path, S. C., has been appointed superintendent of the new Williamston Rayon Plant, Williamston, S. C.

Frank Brazeal has become overseer of finishing at Dunn Worsted Mills, Woonsocket, R. I.

Frank Broadhead is now with Princeton Knitting Mills, Inc., Watertown, Conn., as a shift dyer.

Sidney Bryson has been named superintendent of Speir Textiles, Morganton, N. C. He was formerly with United Rayon Mills, Inc., Old Fort, N. C.



EDWIN J. FITZPATRICK has been elected a director of Johnson & Johnson, New Brunswick, N. J. Mr. Fitzpatrick is also president of Industrial Tape Corp., New Brunswick.

John Cahill, has been appointed superintendent of garnetting, blending, mixing, and the shoddy mill at Acushnet Carpet Mills, Inc., New Bedford, Mass.

W. J. Carter, executive vice president and executive officer of Carter Fabrics Div. of J. P. Stevens & Co., Inc., Greensboro, N. C., has been elected chairman of the finance committee.

D. Hunter Cauble has been promoted to general superintendent of A. M. Smyre Mfg. Co., Gastonia, N. C. **Lester H. Whitener** has been named superintendent.

Philip E. Church has been elected a vice president of Canadian Automotive Trim Ltd., Windsor, Ont., a subsidiary of National Automotive Fibres, Inc., Detroit, Mich.

S. Morse Clark has been appointed general superintendent

How to keep informed on the "with what" part of your business

AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

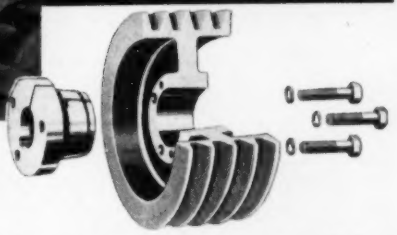
Each advertiser is obviously doing his level best to give you helpful information. By showing, through the advertising pages, how his product or service can benefit *you* and *your* company, he is taking *his* most efficient way toward a sale.

Add up all the advertisers and you've got a gold mine of current, on-the-job information. Yours for the reading are a wealth of data and facts on the very latest in products, services, tools . . . product developments, materials, processes, methods.

You, too, have a big stake in the advertising pages. Read them regularly, carefully to keep job-informed on the "with what" part of your business.

McGRAW-HILL PUBLICATIONS

sheaves changed easier-quicker



Wood's

"SURE-GRIP" Sheave with Interchangeable Hub

Slide sheave and hub on shaft as one unit. Completely split-tapered hub gives all around grip on shaft—allows use on oversize or undersize shaft. To remove sheave, loosen cap screws, insert them in oversize holes and use as jack screws—so simple a child could do it. Wood's offers immediate delivery in a wide range of sizes. When ordering, specify Wood's "Sure-Grip" Sheave with interchangeable hub. This hub and rim combination is also sold through your Industrial Distributor.

T. B. WOOD'S SONS CO.
CHAMBERSBURG, PA.

Branches: Cambridge, Mass., Newark, N. J., Dallas, Tex., Cleveland, O.

Spinners of Fine Woolen, Merino & Specialty Yarns

The ALDON SPINNING MILLS Corp.
TALCOTTVILLE, CONN.
Represented by
Richard C. O'Brien
Boston • New York • Philadelphia • Charlotte

DANA WARP MILLS
Westbrook, Maine
Cotton yarns, single and ply
Carded and Combed
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps

TEXTILE WORLD

Reprints Available

▶ **Reprints of the following articles run in past issues of TEXTILE WORLD are available at the prices indicated. To order, write or use the coupon below, stating the titles of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.**

SYNTHETIC-FIBER CHART — **25¢ each, 15¢ in lots of 20 or more**
The latest (1951) edition lists the 12 main types of synthetic fibers and reports their physical and chemical properties. Comparative tables on properties of cotton and wool are included. The chart also gives figures on synthetic-fiber consumption, lists all commercially available synthetic continuous-filament yarns and staples, and gives other important data.

TEXTILE BIBLIOGRAPHY — **25¢ each, 15¢ in lots of 20 or more**
An up-to-date listing of the important English-language books on textile technology. Twelve page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

WOOL FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Worsted-yarn manufacturing by Bradford, French, and American systems; woolen-yarn manufacturing; weaving and finishing processes for six typical fabrics are shown and illustrated in sequence. Principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step processes in handling continuous filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

KNITTING FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half hose, and knit underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**
Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

SHRINKAGE TABLES — **25¢ each, 15¢ in lots of 20 or more**
These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yd.

IN-PLANT FEEDING (Aug. '51). 10 pages. 15¢ each, 10¢ in lots of 20 or more.
SETTING A WORKLOAD (Oct. '51). 8 pages. 15¢ each, 10¢ in lots of 20 or more.
AMERICAN TEXTILE-MACHINERY EXHIBITION REPORT (July, '50). 56 pages. Free.
CENTRALIZED LUBRICATION OF TEXTILE MACHINERY (May, '49). 12 pages. 25¢ each, 15¢ in lots of 20 or more.
HOMOGENIZATION IN WARP SIZING (Nov., '49). 8 pages. 25¢ each, 15¢ in lots of 20 or more.
STANDARDS DEPARTMENTS (March, '50). 8 pages. 25¢ each, 15¢ in lots of 20 or more.
HOW TO DIAGNOSE BEARING FAILURES (Feb., '52). 4 pages. 15¢ each, 10¢ in lots of 20 or more.
NEPS . . . AND HOW TO CONTROL THEM (May, '52). 16 pages. 25¢ each, 15¢ in lots of 20 or more.

The following reprints are 10¢ each, 7¢ in quantities of 20 or more.
TEXTILE WORLD's Finishing Symbols (Jan., '49)
Yield Chart Gives Knitting Data (July, '49)
New Dye Technique Shows Maturity of Cotton (July, '47)
Let's Knot—and Do It the Right Way (June, '46)
Ramie—an Impartial Report (Dec., '45)

EDITOR
TEXTILE WORLD
330 West 42nd St.
New York 36, N. Y.

Please send the following TEXTILE WORLD reprints. My check or money order is enclosed.

Quantity	Reprint Title	Cost Each	Total Cost

Name .....

Street .....

City ..... State .....

News About **MEN** (Continued)

JOHN E. REEVES (left) has been named executive vice president of Reeves Bros., Inc., New York, N. Y., in addition to his duties as treasurer. HENRY C. HOFFMANN (center) has been appointed head of the newly formed executive committee. S. L. LEWIS, JR., (right) has been appointed vice president in charge of sales. Mr. Reeves and Mr. Lewis will serve on the executive committee.

of the Kennebec Mills of American Woolen Co., Fairfield, Maine. He succeeds **Otto Zambona**, who has resigned.

William W. Colman is now in charge of the jig-dye department at Monument Mills, Inc., Housatonic, Mass.

L. R. Connell has been named overseer of weaving at Collins & Aikman Corp., Bristol, R. I.

True W. Cornell has resigned as overseer of cotton carding and spinning at W. S. Libbey Co., Lewiston, Me.

Oliver R. Cross has been appointed treasurer of Cross Cotton Mills Co., Marion, N. C. **C. F. Goldsmith** has been named secretary.

Fletcher S. Culpepper has resigned as superintendent of the rayon-staple spinning plant of Stonecutter Mills Corp., Spindale, N. C., to rejoin Saco-Lowell Shops as a sales representative.

Arthur Dixon has been named overseer of weaving at Ware Woolen Co., Ware, Mass. He succeeds **G. Davis**, resigned.

Stephen Dunton has been named manager of the purchasing and production-scheduling department of Chicopee Mills, Inc., New York, N. Y. Mr. Dunton succeeds **R. V. Thomas**, who has retired.

Charles J. Dupuis has been elected to the board of Grand'Mere Knitting Co. Ltd., Grand'Mere, Que.

Paul Ebert has been named superintendent of Arista Mills, Winston-Salem, N. C.

Ernest A. Eckert, manager of the worsted mills for American Woolen Co., Andover, Mass., has arrived at Tifton, Ga., to supervise the setting-up of machinery in the plant that the company purchased last summer.

Joseph V. Einstein has been appointed overseer of finishing for the Collins & Aikman plant in Bristol, R. I.

Louis H. Fracher has resigned as director of public relations for Dan River Mills, Danville, Va.

William F. Franck has been elected president of Sale Knitting Co., Martinsville, Va. He succeeds **E. A. Searle**, who has been named chairman of the board.

James Feenstra, Sr., has resigned as overseer of finishing at Northfield Mills, Inc., Northfield, Vt. He is now overseer of finishing at Swift River Woolen Co., Westerly, R. I.

P. F. Gannon has been appointed superintendent of all departments of Warren Fabrics Co., Inc., West Warren, Mass.

Tom Gillam has been named superintendent of warp preparation at Borden Mills, Kingsport, Tenn. Mr. Gillam succeeds **George Bolen**, who has resigned.

F. E. Grimshaw has been named secretary of Verney Corp. of Canada, Montreal.

News About **MEN** (Continued)

WILLIAM D. HARTMAN (left) and JOHN O. NEIKIRK (right) were elected vice presidents of Wellington Sears Co., Inc., New York, N. Y.

Other appointments include **O. R. Simek**, supervisor of the Verney mills and assistant to the vice president and general manager; **P. S. Dolly**, manager of the St. Hyacinthe division; and **W. L. Blanchet**, manager of the Granby division.

Martin H. Gurley, Jr., has been named manager of the technical department of Duplan Corp., Kingston, Pa.

Garner Hallman has assumed his duties as head of the statistical control program for the American Thread Co. division at Clover, S. C.

James Hamil has joined Fulton Bag & Cotton Mills, Atlanta, Ga., and will assist in the coordination of plant engineering.

Elias G. Hawkins has been named vice president and director of manufacturing at James Lees & Sons Co., Bridgeport, Pa. **Russell C. Gebert** has been named assistant to the president and director of the company's product research activities.

Lowell E. Hawthorne has been named to the board of American Woolen Co., New York, N. Y., succeeding **Charles H. Silver**, retired.

Fred Hill, who recently retired as superintendent of the underwear knitting section, Eaton Knitting Co. Ltd., Hamilton, Ont., has been named pro tem knitting instructor at the Provincial Institute of Textiles in Hamilton for the 1952-53 season. Mr. Hill is replacing **James H. Blore**, who resigned recently to join the staff of TEXTILE WORLD.

J. V. Hill has been appointed vice president of Canada Woven Label Ltd., Montreal.

Robert L. Huffines, Jr., has resigned as president of Burlington Mills Corp. of New York and as executive vice president of Burlington Mills Corp., Greensboro, N. C. He will continue in an advisory capacity and as a director of the parent company.

J. Harold Hughes has been named credit manager of American Woolen Co., New York, N. Y., succeeding **Henry C. Scheer**, retired.

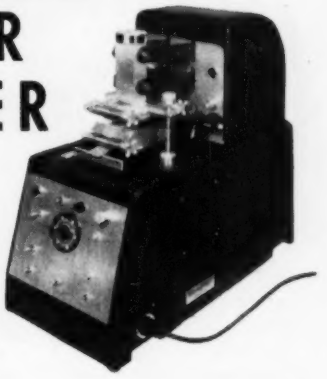
Arthur L. Jackson, assistant superintendent of Fieldcrest Mills, Leaksville, N. C., has been named superintendent. He succeeds **Howard Barton**, who has been named secretary of the management's housekeeping committee.

William C. Koch has joined the New York office of Jefferson Woolen Mills, Knoxville, Tenn., where he will head the styling and fabricating department.

A. G. Kuziak has been named a director of Saskatchewan Wool Products Ltd., Moose Jaw, Sask.

J. G. Lecrone, assistant manager of Aberfoyle Mfg. Co. Ltd., Guelph, Ont., Canada, has been named plant manager of Aberfoyle Mfg. Co., Bridgeton, N. J. **A. S. Wilson, Jr.**, company engineer in charge of

CSI-Stoll Quartermaster
UNIVERSAL WEAR TESTER

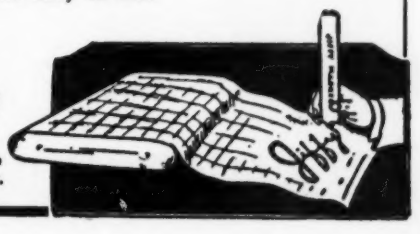


THE CSI-Stoll Quartermaster Universal Wear Tester is a multi-purpose instrument for measuring resistance to laboratory wear of such materials as woven and knitted fabrics, napped and pile fabrics, hosiery, felt, non-woven and coated fabrics, yarn, threads and plastic films, rubber sheeting, leather, paper and many other materials. It is a self-contained precision instrument which gives direct evaluation of quantative parameters for resistance to surface abrasion; edge, fold and projection abrasion; roll and fold testing and flex abrasion. All these tests may be made with a specimen dry or immersed in water, oil or other liquids. Automatic end points are provided for all test procedures.

CSI — *CUSTOM SCIENTIFIC INSTRUMENTS, INC.*
541-545 Devon Street — Arlington, New Jersey
MANUFACTURERS OF CUSTOM-BUILT LABORATORY EQUIPMENT

Industrial Engineers
SPECIALIZING IN TEXTILES FOR OVER ONE-THIRD OF A CENTURY
PAYROLL CONTROLS — COST SYSTEMS
SPECIAL REPORTS — WORK LOAD STUDIES
COST REDUCTION REPORTS
Ralph E. Loper Co.
GREENVILLE, S. C. — FALL RIVER, MASS.

JIFFY TEXTILE MARKER
For use on rayon, cotton and woolen material.
Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.
For information address
JIFFY TEXTILE MARKER CO.
406 W. School Lane
Philadelphia 44, Pa.



For more information, write direct or use Reader Service post card. 283

STRENGTH!
PRECISION!
LIGHTNESS!

Spools and bobbins are the most abused tools in the industry. Akron Spools are custom engineered to take it! One look tells you why.

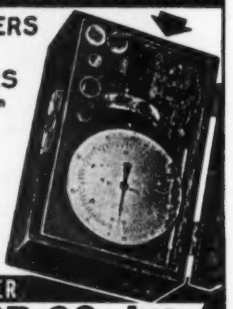
We will gladly show how well Akron Spools are holding up in the world's largest mills.

Drop us a card!

AKRON SPOOL AND MFG. CO.
Box 142 Cuyahoga Falls, Ohio

Control **MAXIMUM PRODUCTION**
with **G. S. HAND TACHOMETERS** *and* **SPEED INDICATORS**

1% Accuracy for any range from 30 to 100 000 RPM or surface speed.
Antimagnetic durable mechanism.
Efficient repair service at moderate charges.

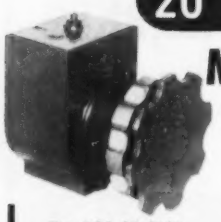


IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., INC.
200 F LAFAYETTE ST. • N.Y. 12, N.Y.

20 DAY FREE TRIAL



M&J CORD FLAT CHAIN LUBRICATOR

• **ADVANTAGES** •

1. Lubricating while card is being ground. Requires very little attention.
2. Increases life of expensive flat chains. 40% increase already proven and still running.
3. Reduces replacements of expensive case hardened worm gears. Some grinders report 75% saving!
4. Insures accurate settings by eliminating "bucked flats."

The **M&J lubricator** has been tested and approved by some of the largest textile companies in the United States. Write or wire today for full details.

W. G. JARRELL MACHINE CO.
1200 South Mint Street Charlotte, N. C.

News About **MEN** (Continued)

building the Bridgeton plant and plant manager during the organization period, has assumed new duties in the Aberfoyle executive offices in Philadelphia.

Willard Limbacher has been named superintendent of knitting at Elmira Knitting Co., Elmira Heights, N. Y.

George Westcott Little has been appointed resident manager of the Hartsville, S. C., plant of United States Finishing Co.

Harry Lunt has been appointed night superintendent at Wilton Woolen Co., Wilton, Me.

John D. MacLaughlan, Jr., has been named administrative assistant to **Basil D. Browder,** executive vice president of Dan River Mills, Danville, Va.

Ben Mayo and **James Bennett,** assistants to the superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C., have been promoted to divisional superintendents. **Duward Costner,** formerly superintendent of the color department, also has been named a divisional superintendent.

John L. Morgan, Jr., has been promoted to assistant general manager of Republic Cotton Mills, Great Falls, S. C.

Richard C. Moyer, general manager of the Blue Mountain Mill of Linen Thread Co., Blue Mountain, Ala., has been elected to the board of directors of Linen Thread Co., Paterson, N. J.

John J. Newton has been appointed superintendent of Dan River Mills No. 3 Div. in Schoolfield, Va. **Edward R. Hopkins** has been appointed section superintendent of rayon dyeing and finishing operations at the Riverside Div. in Danville, Va. Mr. Newton succeeds **J. J. Carrick,** resigned.

Russell B. Newton, former president of Dan River Mills, Inc., Danville, Va., has joined the Deering, Milliken Mill Group as president of its Research Trust. **Dr. Norman C. Armitage,** who has been president, will be associated with Mr. Newton as vice president.

Leonard Phillips has been appointed manager of Ware Knitters, Hardwick, Vt.

H. A. Pickford is now vice president of Crompton Highland Mills, Griffin, Ga.

George W. Pierce has been appointed general manager of the Fairview plant of Julius Kayser & Co., Fountain Inn, S. C., succeeding **Joe Beers.**

Allan Rathbone, standards engineer at Cosmos Imperial Mills Ltd., Yarmouth, N. S., has been appointed assistant works manager of the Hamilton Cotton Co. Ltd., Hamilton, Ont.

Edward D. Rohrbach has been named director of industrial relations at Botany Mills, Passaic, N. J., succeeding **Maj. Gen. Irving Philippson.**

Ben Salkeld is now finisher at Portland Woolen Mills, Inc., Portland, Ore. He formerly held a similar position with Slingsby Mfg. Co. Ltd., Brantford, Ont.

Charles R. Sandner has joined Broad Brook Co., Broad Brook, Conn., as assistant dyer.

Walter Sands has been named overseer of carding at Wilton Woolen Co., Wilton, Me.

Eugene P. Schremp, consulting editor of TEXTILE WORLD, has been named overseer of winding and weaving at Wyandotte Worsted Mills, Waterville, Me.

Radley Sheldrick has been appointed superintendent at George E. Duffy Mfg. Co., Worcester, Mass., succeeding **J. Craig Cameron.**

David F. Sherrill has been named assistant to the general manager of the Reeves Bros. group. He will maintain his office at the Fairforest Finishing Co., Spartanburg, S. C. **S. E. Murdoch,** superintendent of the Reeves Bros. Chesney Plant, Chesney, S. C., has succeeded Mr. Sherrill as superintendent at Mills Mill No. 2.

William Shuman has been named overseer of dyeing in the blended-fabrics division of United Wool Piece Dying & Finishing Co., Passaic, N. J.

News About **MEN** (Continued)

Willard F. Staples has been named president of Merrimack Mfg. Co., Lowell, Mass., succeeding **Abram Berkowitz.**

John P. Stevens, Jr., has been elected chairman of the board of J. P. Stevens & Co. **John H. Sutherland** was elected president, succeeding Mr. Stevens. **Thomas W. Estes** was elected executive vice president.

Robert W. Stokes, Jr., and **Charles J. Stokes** were elected to the board of Monroe Mills Co., Monroe, N. C. They succeed **Irwin Belk** and the late **W. H. Belk.**

Harry A. Turner has been promoted from assistant superintendent of cotton finishing to superintendent of the finishing plant of Riegel Textile Corp., Ware Shoals Div., Ware Shoals, S. C. Mr. Turner succeeds **Robert F. McKown.**

John H. Walker has been appointed superintendent of Textron Puerto Rico's tricot knitting plant, Humacao, Puerto Rico.

Clarence E. Wylie, assistant purchasing agent for Springs Mills, has been named purchasing agent for Mooresville Cotton Mills, Mooresville, N. C., succeeding **J. Chester Johnson**, resigned.

OBITUARY

Lee Ashcraft, 82, a director of West Point Mfg. Co., West Point, Ga.

Rudolf L. Bergman, general manager of Fulton Mills, Fulton, N. Y.

Donald A. Bollinger, 65, chairman of the board of Seymour Woolen Mills, Seymour, Ind.

William K. Caldwell, 82, owner of Crescent Textile Co., Rockledge, Pa.

Clifford L. Cann, 74, superintendent of Cosmos Imperial Mills Ltd., Yarmouth, N. S.

Samuel Augustine Courtauld, 87, one of the founding directors of Courtaulds Ltd., Cornwall, Ont.

Ervin S. Dunn, 82, president of Dunn Worsted Mills, Inc., Woonsocket, R. I., and vice president of Stafford Worsted Mills, Stafford Springs, Conn.

Samuel J. Eccles, 71, former personnel manager of Continental Mills, Lewiston, Me.

Franklin G. Heffner, 88, vice president of Globe Mills, Leesport, Pa.

A. H. Judge, chief dyer at Kerr Mills of American Thread Co., Fall River, Mass.

Harry A. Kayes, 41, general merchandising manager of Dominion Textile Co. Ltd., Montreal, Quebec.

Edward S. MacDermott, 56, a vice president of William Iselin Co., Inc., New York, N. Y.

Herbert A. Matteson, 78, retired head chemist at the former Crompton Velvet & Corduroy Mill, Coventry, R. I.

Claude A. Phipps, vice president of Continental Mills, Inc., Philadelphia, Pa.

H. Paul Rinehart, Jr., 66, senior partner of Evenspun Yarn Mills, Philadelphia, Pa.

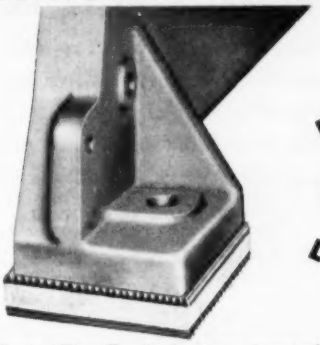
James A. Schmiedl, 59, secretary and purchasing agent of Colonial Woolen Mills Co., Cleveland, Ohio.

DeLambert Pickney Stowe, 64, secretary-treasurer of Perfection Spinning Co. and South Folk Mfg. Co. and vice president of Acme Spinning Co., Belmont, N. C.

Stanhope Anthony Summey, 71, superintendent of Alexander Mills Div., North Carolina Finishing Co., Forest City, N. C.

James M. Wilkins, 50, sales manager for Liberty Hosiery Mills, Liberty, N. C.

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING

NO CEMENTING

LOW COST

Elasto-Rib effectively stops transmission of vibration and noise from looms and other textile machinery by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-702 and free sample.

THE **KORFUND** COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-56G Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

CALDWELL TANKS—
First Choice of the Textile Industry!

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

W. E. CALDWELL CO., Inc.
2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

SALES REPRESENTATIVE for PIEDMONT

Textile Fibers: Staple, Garnett, and Top—Also commission dyeing on latest equipment—Complete line synthetics, nylon, orlon, viscose, to X51—Prefer ambitious young man with car to travel Virginia and Carolinas—Textile experience preferred—Good salary—Excellent opportunity. Write full details to

RW-6917, Textile World
330 W. 42nd St., New York 36, N. Y.

WANTED
EXPERIENCED NOVELTY YARN MAKER

Man experienced in manufacture of novelty yarns wanted. Prefer man with supervisory ability; should be quality conscious and production minded. Able to operate department or assist manager. Advancement prospects good.

P-6519, Textile World
330 W. 42 St., New York 36, N. Y.

MEN WANTED
POSITIONS OPEN

We can place: MANAGER synthetic yarn mill; gen. mgr. worsted top mill; mgrs. for mills making outerwear and sweaters; woolen yarn supt; asst. supt. shoddy mill; asst. supt. rayon weav.; supt. nar. fab. mill; asst. supts. and designers woolen mills; woolen-worsted men's wear and dress goods designers for mills and positions in New York City; asst. designers for woolens and worsteds, men's wear and dress goods for U. S. and Canada.

OVERSEERS for carding synthetic fibres; worsted card; woolen, cotton and rayon piece dyeing; finishing knit. fabrics; package, skein and warp dyeing; plush dyeing; plush finishing; dyeing laces, webbings, elastic materials and piece goods, also knit. and woven fabrics; knit. spring needle mach; woolen and worsted finishing (U. S. and Canada); sewing knit. fabrics; wool scouring; worsted draw. and spin. cot. cloth room; pile fabric weaving; woolen spinning; slashing; cot. weaving; cot. carding; worsted carding and combing; shoddy carding; worsted dressing. Foreiady for sweater mill near Boston.

SECOND HANDS for underwear cutting and sewing; silk skein dyeing; woolen carding; napping and gigging; woolen dyeing; woolen spin.; rayon-cot. weav.; cot. carding.

MASTER MECHANICS; plants engineers and asst. plant engineers; power plant supervisors; plant maintenance engineer; chemists, chem. engineers and laboratory men; technical service man; training supervisor; salesman to sell mills in Me., N. H., and Vt.; wool salesman; salesman paper makers' felts (Midwest territory); rayon-cot. finisher to sell fin. machinery; industrial engineers, one to take charge industrial engineering; expert shear grinder-foreman; loom fixers; full fash. hos. fixer; tex. school graduates; cost accountants; time study men; warehouse foreman; sew. mach. fixers; nar. fab. loom fixer; fixers latch needle and knit glove mach. also Komet machines; retired card clothing salesman; 3 tricot fixers; pin setters; garnett operator-fixer; cotton piece goods salesman for N. Y. City.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE Inc.
294 Washington St. Boston 8, Mass.
Telephone Liberty 2-6547
SPECIALISTS IN PLACING AND IN SUPPLYING TEXTILE MILL EXECUTIVES

WANTED
Industrial Engineer

Excellent opportunity for a graduate industrial engineer with a leading acetate yarn producer.

The position is a permanent one in a growing organization and offers a real challenge to an ambitious man. One or two years' industrial engineering experience required, including experience in making cost reduction studies, time and motion studies, and setting work standards.

State education, experience, and salary wanted in application letter.

P-6728, Textile World
330 W. 42 St., New York 36, N. Y.

REPRESENTATIVE WANTED

Swiss Manufacturers of automatic pirn (weft-) winders, conewinders, especially designed for synthetic yarns, rayon etc. look for well introduced representatives in New England, the Southern and Philadelphia-district.
Address Replies:
RW-6989, Textile World
330 W. 42 St., New York 36, N. Y.

TEXTILE
TECHNICIANS-ENGINEERS
SUPERINTENDENTS-MGRS.
EXECUTIVES-CONTROLLERS
OVERSEERS-ASSISTANTS
CHEMISTS-DYERS
Executive and Prodn Personnel
Available for prompt placements
A B C PERSONNEL, Inc.
Ph. D. KAPPS, Manager
226 W. 42nd St., New York, N. Y. CH 4-2945

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

LARGE MANUFACTURER of synthetic fibers and dyestuffs in the South desires a young college graduate with 2-5 years laboratory or plant experience in the dyeing of synthetics to work as a chemist in service laboratory. P-6847, Textile World.

OPENING FOR experienced carder and Spinner for Cotton Mill located in Piedmont Section of North Carolina. Address P-6822, Textile World.

WANTED—EXPERIENCED loom fixers on Fletcher narrow fabric looms. Highest pay. Steady work. Apply in person or by mail. Oehirle Brothers Co. Inc., 423 N. 3rd St., Philadelphia 23, Pa.

SELLING OPPORTUNITY OFFERED

WANTED: SUCCESSFUL Mfgr's Agents to add textile-finishing machinery. Commission basis. SW-6704, Textile World.

POSITIONS WANTED

AMERICAN TEXTILE engineer desires position with textile mill or machinery selling firm in South America. Several years experience in South America. Excellent background in mill and machinery sales, particularly on spinning, but can handle both spinning and weaving. Age 39, married, no children. Reply PW-6858, Textile World, 330 W. 42nd St., New York.

EXPERIENCED KNITTING mill man on cotton, rayon, wool, and new fibres seeks new position. Experience covers yarn manufacturing on cotton & wool. Also Knitting, dyeing, cut & sew, press, pack and ship, production control. Also experienced in industrial engineering, industrial relations, time study, rate setting, cost accounting and buying. Have held jobs of Superintendent, and Manager. Write PW-6656, Textile World.

SYNTHETIC YARN EXPERT

Successful as Plant Manager and Superintendent of Worsted Yarn Mills desires position with progressive Textile Plant. Energetic and competent in production planning and profitable operation. College degree Industrial Management, Textile School, great practical experience. Age 46, employed but available on short notice.

PW-6800, Textile World
330 West 42nd St., New York 36, N. Y.

Additional Wanted Advertising on page 289

POSITIONS WANTED

AVAILABLE-INSIDE man 20 years experience—10 years foreman fixer—tricot and simplex. Prefer to locate in South. PW-6876, Textile World.

OVERSEER OF weaving available, now employed—Excellent quality and efficiency record. Experience includes both Draper & C&K looms. Capable training own help. Hygrade man. Best of references from employers as well as Textile School. PW-6952, Textile World.

RAYON NYLON Throwster. Thoroughly experienced in production and supervision. Modern and practical methods in all phases of throwing. Capable establishing throwing units and training own help in all throwing departments. Married. References. Employed. PW-6556. Textile World.

TRICOT MECHANIC foreman A1, many years experience. Building repairing, Tricot & Milanese. Make up pattern chains & stud wheels. Figure own patterns. PW-6899, Textile World.

SELLING OPPORTUNITY WANTED

DETROIT MANUFACTURER'S Representative with substantial warehouse desires line of upholstering fabrics for sale to the automotive industry in Michigan. We have active contacts and friendships in all major accounts in this area. RA-6719, Textile World.

CONTRACT WORK WANTED

Silk throwing exclusively!
Quality minded mill has some capacity open for fast deliveries. Moderate prices. May we quote? Box 8785, 217 7 Ave., N. Y.

AVAILABLE FOR
CONSULTING WORK

Textile wet-processing, (dyeing & finishing) for short or long-term engagements within or outside USA.

PW-6560, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED
BUHLMAN
SKEIN DYEING MACHINE

W-6928, Textile World
330 W. 42 St., New York 36, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1918

PROFESSIONAL SERVICES

EATON & BELL
Patent Attorneys

904 Johnston Bldg., Charlotte, N. C.
1149 Munsey Bldg., Washington, D. C.

Still many terrific buys available in the sensational . . . . .

MILLION DOLLAR PLANT LIQUIDATION

OF WEAVING • THROWING EQUIPT. • SUPPLIES

sold as INDIVIDUAL ITEMS!

we are EXCLUSIVE AGENTS!

Plant & Equipment of
Standard Silk Division
A. D. JULLIARD & CO.
Chadwicks, N. Y.

Most Machinery
1948 to 1952 . . . some
NEVER USED!

BUILDING ALSO FOR SALE
100,000 sq. ft. floor space, 45,000 sq. ft. with Humi ducts and refrigeration installed in 1950. 15-20 acres ground.

You've still time to cash in on the tremendous values available in this "once-in-a-lifetime" opportunity to SAVE! It's the greatest "piece-meal" plant liquidation in textile history. Most machinery is less than 4 years old . . . . some NEVER USED. All machinery suitable for nylon work. Our representatives will be at Chadwicks Tuesday through Thursday. All merchandise sold F.O.B. Chadwicks, N. Y., and is subject to prior sale.

Listed are but a few of the many items still available for immediate delivery.

96—C & K—S-6 1949-1950 LOOMS
Complete with beams, heddles, quills, harness frames, etc. 56" between swords, 2x1 box, 20 harness #7 Dobbies 15/32 gauge double index. 1 H.P. G.E. motor. Roller bearings crank & bottom shafts. Warp stock 6 bank KA Elec. 3 shift Veeder Root pick counters and cut meters.

WHITIN-SCHWEITER 96—SPINDLES-1949-1950
Automatic quilling. Will take 10⅛" bobbins. Machines in like-new condition.

44—Atwood 1952 Unirail
D.D. Twisters—Brand New!
1 lb. Pkge. 28-184 spindles ea. 16-220 spindles ea. Erected but NEVER USED. Brand new take-up shafts, spindle bobbins, and stainless steel bobbin trays for Nylon. This brand new machinery offered at a fraction of new value.

72—44" DRAPER XK'S
Motorized, automatic. Complete with beams, drop wires, heddles, electric stop motions, etc.

1—JOHNSON 5 drum SLASHER
Silk system. 65" copper-tinned cans. Manual controls. Reeves variable speed drive. Up to 20 YPM. 3 H.P. 60 cycle motor, carriage accommodated 24" beams. Two quetch rolls. One felt-jacketed, one copper.

2—ATWOOD D.D. Model 110 1948 motorized TWISTERS
208 spindles each. 1 lb. pkge. Bobbins for all machines.

8—1949 ATWOOD D.D. motorized UTILITY TWISTERS
204 spindles each. ½ lb. pkge. 5" spacing. Bobbins for all machines.

1—1950 SIPP-EASTWOOD High Speed Direct WARPER
To take beam 54¼" between heads with maximum flange diameter of 36". Complete with static eliminator.

1—1951 SIPP-EASTWOOD Magazine CONE CREEL
860 end. 4 lb. cones. 10 rows high, 7 5/16" vertical centers. 43 rows long. 17" horizontal centers.

1—1943 WARP COMPRESSOR
800 end creel. 4 lb. cones.

3—SIPP-EASTWOOD 83" Heavy Duty Motorized WARPERS
8 yard. Low beam. Will take up to 26" head beams. Excellent condition.

4—1951 ATWOOD High Speed Motorized REDRAWS
Spindleless. 68 spindles each. Can be used for 1 lb. or ½ lb. pkge.

8—1949 ATWOOD Motorized REDRAWS
High speed. 68 spindles each. Can be used for 1 lb. or ½ lb. bobbins. 4 have winder parts for conversion.

1—1951 SIPP-EASTWOOD 101" High Speed Horizontal WARPER
Heavy wood. 3 H.P. variable speed motor drive. Will accommodate 28" flange beams. Warper complete in every detail.

MISCELLANEOUS
45,000 sq. ft. Humiducts and Refrigeration Machine shop equipment for metal and wood Office equipment, scales, trucks, etc.

Many items already sold . . . . SO HURRY! WRITE—PHONE—OR WIRE, TODAY.

PHONE HEmlock 3-7497

Wm. Rabinowitz & Sons

214-222 HAMILTON STREET • ALLENTOWN, PA.

PHONE HEmlock 3-7498

WRITE PHONE WIRE

LIQUIDATION SALES NOW BEING HELD

TEXTRON FINISHING PLANT—MANCHESTER, N. H.

1—Rodney Hunt Stainless Steel Tensitral Washer 72", 1950
2—V.V. G.L. Scouring & Boil-off Washers, 1948
1—V.V. Stainless Steel Drum Setter & Boil-off 72", 1948
1—Morrison Heat Setting Machine 70", Brown controls, 1951
1—Enclosed Stainless Steel 14' Dye Box, 34-string, 1951
1—V.V. Pneu. Embossing Calender 54", Treebark, 1951
1—V.V. Decatizer 45", L4 pump and blanket, 1947

OPAL PROCESSING CO.—HALEDON, N. J.

5—Rice, Barton & Fales Print Machines; 10 colors 58", 8 colors 58", 8 colors 50", 6 colors 45", 4 colors 46".
1—Stainless Steel Rope Washer 54'x14', 58 sect., 1948
1—Morrison Jacketed Palmer 64x60", quetch, 1945

PRINTEX DIVISION—PATERSON, N. J.

7—Rice, Barton & Fales Print Machines; 8 color 64", two 8 color 50", two 8 color 48", 8 color 45", and 6 color 48", backrigging and motors.
1—V.V. Stainless Steel Hi-speed Rope Washer 55x20'
4—V.V. Stainless Steel Duplex Dye Boxes, 8' wide, m.d.
6—V.V. Stainless Steel Duplex Dye Boxes, 6' wide, m.d.
2—V.V. Enclosed Stainless Steel Dye Boxes 5' wide, m.d.
4—Textile Vat Agers, C.I., 15-30' long, 60-62" wide
1—Nat'l. Loop Dryer 40' long, 10 fans, 103" wide
3—Tenter Frames: W&J, V.V., 50'x60", 50'x54", 40'x54"

Complete Lists of Machinery & Equipment will be forwarded upon request.

Telephone #Cortlandt 7-1591

REPUBLIC TEXTILE EQUIPMENT CO.
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

100 S3 LOOMS C & K—56" & 58" LARGE SHUTTLES @ **$250.00**
20—D.D. ATWOOD UTILITY Uptwisters @ **$350.00**
1—H&W YARN CONDITIONING BOX @ **$600.00**
100—NO. 50 UNIVERSAL CONERS GEAR GAINERS "A"—"L" DRIVES S. S. ROLLS—TROUGHS—PINEAPPLE
3—ATWOOD-5B —4" RINGS—50 SPINDLES—6" TRAV.
25—JUMBO DOUBLERS —4" RINGS—110 SPINDLES—6" TRAV.

PENNSYLVANIA SPOOL & EQUIPMENT CO.
530 N. FULTON ST. ALLENTOWN, PA. Phone 3-7545

LIQUIDATING—For Immediate Removal

PARTIAL LISTING

475—Copper Print Rolls, 14½—17" Cir. x 44"—46" wide.
1—60" Finishing Calender, 3 roll, ball bearing.
3—Pin Tenter Frames, 80' x 62", elect. guiders, auto openers, quetches, etc.
1—50" Padder, 2 rubber rolls 16" dia., ball bearing.
1—50" Semi Decator, pump, motors, new blanket.
2—Scutchers, 1—110", 1—54" 2 line unit.
1—2 Color 45" Print Machine.

WE WELCOME YOUR INQUIRIES

INDUSTRIAL PRODUCTS OF AMERICA
140 Market Street Paterson, New Jersey
Sherwood 2-6614-5-6 IPA Cables: Texindus

News of the Month

(*Continued from page 260*)

Association's headquarters at Manchester.

A year ago, a similar touring exhibition spotlighted techniques that Shirley Institute had developed to help British spinning mills increase their production, improve quality, and cut costs.

WAGE STRUCTURE ANALYZED

A survey of wages paid a year ago among cotton- and synthetic-textile manufacturers has been released by the Bureau of Labor Statistics. The following data on specific job-rate averages are of interest though unfortunately they are not complete.

Loomfixers:	nationwide, $1.73 New England, $1.77 Middle Atlantic, $1.82 Southeast, $1.67
Weavers (men):	nationwide, $1.55 Middle Atlantic, $1.68
Weavers (women):	nationwide, $1.48 New England, $1.54
Winders (women):	nationwide, $1.17 New England, $1.29 Middle Atlantic, $1.14 Southeast, $1.17

The situation for mill employees who obtain other benefits from their employers includes the following items and percentages:

95% get vacations
28% receive pay for six holidays
82 to 84% are covered by life, health, and hospitalization insurance
6% are in a retirement-pension plan

NON-ADHERING SURFACING MATERIAL

Teflon, an aqueous-dispersion plastic finish (polytetrafluoroethylene), is the latest product developed by Du Pont that gives promise of helping textile-mill performance. The new surfacing material remains solid up to 620° F., sprays onto any surface by conventional methods, and fuses at about 700° F. Practically nothing will stick to it.

Sizing liquids will not build up on Teflon-coated slasher cylinders and

(*Continued on page 290*)

FOR SALE

PARTIAL LIST IMMEDIATE DELIVERY

COTTON:

Saco-Lowell OPENING: #5 Feeder with Bale Breaker, Vertical Openers, #12 Lattice, Cleaner, Distributor & Breaker Pickers.
40 Saco & Pettee CARDS, 45", with Continuous Strippers.
4 Naismith Type COMBERS, 6 Feeds.
2 Hetherington LAP MACHINES, Ribbon & Sliver.
14 S.L. & S. & P. BREAKER DRAWING, 78 Deliveries.
14 S.L. & S. & P. FINISHER DRAWING, 78 Deliveries.
7 S. L. SLUBBERS, 96 Spindles, FS-2 L.D. 10x5.

DYEING & FINISHING:

1 Simpson Type BATCHER, 54" with Cutoff Knife.
1 BUTTON BREAKER, 19 Brass B.B. Rolls, 50".
1 DOUBLING, WINDING & MEASURING Machine, 76".
1 LOOP DRYER, 90" Revolving Stick, Fin Coils.
1 PIN DRYER, Return Type, 75" Width.
1 SKEIN DRYER, Continuous Type, 72" on Sticks.
4 DYE BECKS, Rayon, S.S. 6' and 9'.
2 PACKAGE DYEING Units, S.S., 150 & 400 Lb.
1 EXTRACTOR, 48" Copper Basket, Timer, V-Belt Drive.
2 FOLDERS, 90", Ceiling Type, Swing Adjustable.
1 FOLDER, 50", Air Lift. 1 yd. Folds.
2 FOLDERS, 52"-60", 1 yd. Folds.
1 INSPECTING MACHINE, 96", Reversible, Table & Clock.
2 JIGGS, 100", S.S. #316, Tanks.
1 KIER PILER, Rotary Portable Type.
1 MANGLE, 2 Roll, Brass & Rubber, 51-¾" Face.
2 MIXING KETTLES, 26" x 27", Primps & Coils.
2 NAPPERS, S.A. 14 Roll, 72", 12 Roll, 80".
2 NAPPERS, D.A. 18 Roll Units, 78"-90".
1 NAPPER, D.A. 24 Roll, 86", Double Belt Driven Workers.
2 NAPPERS, S.A., Ball Bearing, 20 Roll, 90" (Hooked in Tandem)
1 NAPPER, S.A., Felting Type, 22 Roll, 80".
1 PADDER, 2 Rubber Rolls, 72" x 9" Dia., S.S. Tanks.
1 PADDER, 2 Rubber Rolls, 100" x 22" Dia.
1 PRINT MACHINE, 2 Color, 64", W Bore.
1 PRINT MACHINE, 3 Color, 60", W Bore.
1 PRINT MACHINE, 5 Color, 72", W Bore.
1 PRESS, 66", Double Bed, Rotary Type.
1 QUETSCH, 3 Rolls, 2 Brass, 1 Rubber, 50".
1 QUETSCH, 2 Rolls, Brass & Rubber, 65", with S.S. Dry Can.
1 Toledo DIAL SCALE, 125 Lb., Platform 21" x 29".
1 Howe WEIGHTOGRAPH SCALE, 2000 Lb., Platform 4' x 4'.
1 Merrow 60-D3B SEWING HEAD, on Rotary Stand.
3 Railway SEWING MACHINES, Portable 50"-56".
1 SHEAR, 4 Blade, B.B. 56" Cloth.
1 SHEAR, Flat Blade, Double Cutter 60".
2 SHEARS, Wool Type, Double Cutter, 66½".
1 SQUEEZE SET, 2 Rubber Rolls, 68" x 18" Dia., Air Cyl.
1 SQUEEZE SET, 3 Rolls, Top & Bottom S.S., Middle Rubber, B.B. 60-¾" x 10" Dia.
4 SQUEEZE SETS, Each 2 Rubber Rolls, 18" x 18".
1 TACKING MACHINE, 86", with Singer Sewing Head.
3 TEASEL GIGS, Single Cylinder Units, 67" x 23" Dia. on Bristle.
1 TENTER PIN, 60' x 180" Maximum Width.
1 TENTER CLAMP, 90' x 190" Maximum Width.
4 WASHERS, 11', S.S. Enclosures, Tight Strand Type.
2 WINDERS, 50"-60", for Paper Tubes.

WOOLEN:

1 DUSTER, Iron, 10' Cone Type.
2 DUSTERS, Iron, Model 550, Box Type.
1 OPENER, Double Cylinder, 48".
2 BURR PICKERS, 24"-36", with Blowers.
1 MIXING PICKER, 6 Bar, 48"—4 Feed Rolls.
2—FEARNAUGHT PICKERS, 48" x 48" Cylinders.
3 RAG PICKERS, 18" x 35" Dia. Cylinders.
1 WASTE PULLER, 48" x 48", B.B. Cylinder.
3 CEILING CONDENSERS, 36" x 18" Dia., Self Contained Fan Units.
2 CONDENSERS, Upright Return Air, 72" Wide Cylinders.
1 CARD, One Cylinder, 72" x 50" Dia., Breast & Feeder.
1 CARD, One Cylinder, 60" x 60", Breast & Feeder.
2 CARDS, 3 Cyl., 48" x 60" Dia., Fully Equipped, 120 End Tape Condensers.
1 CARD, 3 Cyl., 48" x 60" Dia., Fully Equipped, Ring Doffers.
2 TAPE CONDENSERS, 60", Single Rub, 96 Ends.
2 DOUBLERS #57, Wood Tube, 100 Spindles, 2 End.
8 BROADBAND FEEDS, 31 Conveyors, 48".
21 IONOTRONS, Static Eliminators, 48".
1 GARNETT, 3 Cyl., 30" x 60", Breast & Feeder.
2 GRINDERS, Floor Type for 60" Card.
3 GRINDERS, Traverse, for 48"-60" Cards.
28 C. & K. LOOMS, 82" Auto. 4x1, 25 Har.
20 C. & K. LOOMS, 82", 4x4, 25 Har.
34 C. & K. Veri-Best LOOMS, 82", Auto. 4x1, 25 Har.
18 C. & K. LOOMS, 92" Auto. 4x1, 25 Harn.
8 MULES G.P., 360 Spindles, 2¼" Gauge.
2 SPINNING FRAMES, 4" Gauge, 180 Spindles.
1 STRIPPER, Model L, with Conveyor for 8-¾" Bobbins.
5 TWISTERS, 184 Spindles, 4" Ring, 6" Gauge.
2 TWISTERS, 132 Spindles, 4½" Ring, 5⅛" Gauge.
1 TWISTER, 100 Spindles, 6" Ring, 7" Gauge.
1 TWISTER, 60 Spindles, 5⅛" Ring, 6½" Gauge.
1 WINDER #30, Paper Cones, 100 Spindles, Comb. Slub Catchers & Waxers.

McDOWELL ASSOCIATES, Inc.
2568 Park Avenue Bronx 51, New York
Tel.: MElrose 5-6741

DOYLE & MILLER
Main & Pensdale Street
Philadelphia 27, Pa.

5—Johnson & Basset mules 424 spindles 2" gauge.
1—Johnson & Basset mule 285 spindles 2½" gauge large package mule.
2—Belgium Cone duster 10'-0".
Iron main cylinders, Doffers, workers for all makes of cards.
Caller boards and step rails for all makes of mules Picker feeds, cards feeds and pickers.

WANTED
TEXTILE MACHINERY
including Carding Machines, Spinners, Automatic Looms, Slashers, S/S Dyers, Extractors, Calenders, Clip & Pin Tenters, Dry Cans, Multi-color Presses.
Will consider operating or idle plant.
P. O. Box 1351
Church Street Sta., New York 8, N. Y.

LIQUIDATING
RIVERVIEW FINISHING CO., PATERSON, N. J.

1—P. S. 8-fan Loop Dryer, revolving sticks, 105" wide, 50' long, late type
1—V. V. 54" Embosser, 2-roll
5—12' S. S. Dye Becks
1—Hennekens Boil Off, new 1948
1—60" Singeing Machine
2—60" Eastwood Floppers
1—V. V. Decatizer
2—Tenter Frames, 40'—30' S. S. Clips
1—V. V. 3-roll Calender, 50"
3—Beamers 76"—55"—50"
2—Copper Jacketed Mixers, 200-gal. and 75-gal.
2—Tubers 50"
1—50" Inspection Machine
3—Merrow Sewing Machines
2—Metropolitan Sewing Machines
3—Extractors, 2—60", 1—48"
1—V. V. 50" Scutcher
1—MacBeth Color Matching Lamp, new 1950
2—Sets of Mt. Hope Guiders
3—76" all S. S. Jiggs
4—60" Verduin all S. S. Jiggs
2—60" S. S. Lined Jiggs
1—V. V. 64" Palmer & Quetch
6—Textile Squeeze Sets, 96" long, 2-rubber rolls 19" and 12" dia., roller bearings
1—Set 8 Copper Dry Cans 84"
1—Set 15 Dry Cans 72", 6—S. S., 9—Copper
1—Set 7 Copper Dry Cans 50" x 30" dia.
1—50" Wooden Expander

FOR ALL INFORMATION—WRITE, WIRE OR CALL

A & M BLANK CO., INC.
301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.
SHerwood 2-1367-8

WANTED TO PURCHASE
HUSSONG DYEING MACHINE
150-500 lbs.
Must be of stainless steel construction and in good condition.
W-6758, Textile World
330 W. 42nd St., New York 36, N. Y.

WANTED
12 TUBE SMITH DRUM SKEIN
DYEING MACHINE
Cascade Type, Monel Metal or Stainless Steel Construction.
W-6237, Textile World
330 West 42nd St., New York 36, N. Y.

WANTED
BOX LOOMS
4—C&K W-3 Box Looms
82 in., 4x1.
CAROLINA CONVERTING MILLS
BLACKSBURG, S. C.

PREPARATORY

3—48″ Picker Feeds
2—60″ Card Feeds
2—48″ D. & F. 6 bar Pickers
2—48″ D. & F. Fearnought Pickers
6—18″—24″ Shoddy or Waste Pickers
2—36″—48″ Burr Pickers
2—Dusters, Cone or Box type
4—18″—36″ Ceiling Condensers

WINDING & WARPING

UNIVERSAL 50's & 90's REBUILT
2—Foster Mod. 12 Skein Winders
1—Foster Mod. 101 Cone Winder
1—Sargent 16 sp. Ball Winder
1—Globe Ball Warper
4—D. & F. Pin or Pinless Warpers

FINISHING

1—Kenyon 72″, 10 pass Cloth Dryer
1—Gessner Mod. 20 Press, 1950
1—Gessner 72″x36″ Decater, 1943
1—P. & S. Truck Skein Dryer, 1939
1—Set (6) Copper Dry Cans, 70″ x 36″
1—Wetting-Out-Tank, S/S Lined, 62″
1—P. & W. 72″ Steam Luster Machine
1—Crab, 3 bowl, 72″, Yorkshire Type
2—Birch Doub. & Tack. Mach., 92″
2—Teasel Gigs, Doub. Cyl., 60″
1—P. & W. 4 cyl. Brush, 66″
1—P. & W. Cloth Doubler, 66″

MISCELLANEOUS

4—Macbeth Color Matching Lamps
1—Singer Overlocker

FRANK W. WHEELER CO.
1837 E. Ruan St. Philadelphia 24, Pa.
Phones: Jefferson 5-4771-4772
Reputable Dealers for over a quarter of a century

UNIVERSAL #50 WINDERS
REBUILT GUARANTEED

Coners, tubers, pineapple coners built to your specifications.

ALSO

64—1 H.P. A.C. Motors 3/60/440—1200 R.P.M.
2—Sargeant Ballers—11″ Gauge
8—Fidelity Reels
6—S.S. Dye Tubs Rodney Hunt, 6'6″
2—P&W 2 and 3 Blade Davidson Shears
3—Pin Tenter Dryers

GAINES TEXTILE MACHINERY CO., INC.
141 West 17th St. New York 11, N. Y.

S&K Where your $$$$ buy MORE

18 W-3 CONVERTIBLE C & K 82″ LOOMS
16 W-2 C & K 82″ 4 x 1 AUTO. LOOMS

1 3 Color-60″ Print Machine
1 60″ Paterson Tuber
3 Hercules 48″-60″ Extractor
300 Auto Drapers 43″ to 76″ cloth
16 C & K Auto Bob Changers 2 x 1—72″ R.S.
140 S-1 C & K 52″ R.S. shuttle changers
12 C & K 4 x 4—54″ R.S.
40 C & K Woolen looms 72″ to 110″ R.S.
1000 Electro Rods 66″ to 133″
1 V.V. 40'-60″ Tenter Frame, Enclosed Gears
1 V.V. 60'-66″ Palmer Tenter Unit, Complete
1 36″ Self Balancing Extractor
1 W&J Tenter Frame 90″ W 30' L
1 W&J Tenter Frame 54″ W 30' L
1 2 Roll 60″ Quetch-V.V.
1 Set of 8—68″ Copper Cans
1 New 80½ Beamer
1 60″ wide Pin Tenter Frame 60'-W. & J.
1 Paterson Examiner, 72″ wide
1 72″ Park Woolson Decater
1 Set 10 Dry Cans 48″ face
6 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64″
1 19 can Butterworth dryer 72″
1 72″ Werner Padder Micro Set
4 Three (3) Roll Padders 45″
30 50″ Dry Cans
4 Johnson Slashers—7—5—3 Can 66″
2 90″ S.S. Jiggs
4 50″ S.S. Jiggs
1 72″ Greige Washer with Squeeze Rolls 24' long
5 Atwood 5B Twisters
9 Atwood Single Deck Utility Spinners
8 Sipp Warpers and Winders
20 #90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
5 Foster-Coners 75A Hy-speed Sippwarper

STAVE & KESSLER
106 KEARNEY ST. P. O. Box 1611 Paterson, N. J.
Phone ARmory 4-7486

(*Continued from page 288*)

drying cans; so heat transfer is more efficient and production speeds can be higher. Some treated cans have been in service for more than two years.

Downtime savings are already being realized in other applications such as vats, troughs, drums, pails, ladles, feed rolls, scroll rolls, and tenter-frame pin plates.

The finish is unaffected by any of the chemicals ordinarly used in mills. There is no known solvent for Teflon. The new finish has a low coefficient of friction; it is slippery to the touch.

NAVY UNDERWEAR DOESN'T SCRATCH

The Navy has introduced a new 100%-cotton knitted underwear that is proving it will retain more body warmth than conventional woolen underwear, is more comfortable, and has more than double the usual wear life.

Made of a waffle-knit fabric, the new garment is expected to save the Navy 50% on its underwear costs and to keep our men on board ships from getting itchy.

Ends-Down Study

(*Continued from page 114*)

for instance "break at pigtail" and "double spinning," are included as a break between front roll and spindle on the chart. Remember that numbers on the analysis sheet and the graph might appear to represent the same break area if the procedure is not made clear in the category names.

The Analysis of Results

Quality. The quality of the wool used is usually fixed by price, by characteristics desired in the finished yarn, or by a combination of these factors. Unless the wool is defective or you are approaching a limit spin, not much is usually done with the quality.

Yarn Number. The specified yarn number usually must be held; however, spinning difficulties are sometimes traced to roving that has become lighter, and the frame spins a lighter yarn number than is desired.

Traveler. Here much can be done. A traveler that is too light will cause poorly wound packages, which in turn will cause breaks. A traveler that is too heavy actually will break the yarn. Too long a time between oilings will vary the traveler drag enough to

(*Continued on page 292*)

USED EQUIPMENT – AVAILABLE IMMEDIATELY

SPINNING

GESSNER TEASEL GIG and BRUSH RANGE — Item GTG-B
New 1948—Used 3 months
68" Working Width

WINDING

SACO LOWELL COTTON SLASHER — Item SLCS-E
Complete with auxiliary equipment
Including Model D High Speed Warper
Regular Width—Beam Type

2 YARN WARP COILERS — Item 12166
Ceiling type

WHITIN QUILLER—MODEL J — Item L-WQ
304 Spindle—
3½" Gauge—10½ Traverse

FINISHING

HUNTER CARBONIZING TANK—NEW — Item HCT-J
Lead-lined Cypress tank
Fittings acid resisting metal
Nip rolls rubber covered
90" wide—Never used

CURTIS & MARBLE STEAM PRESS — Item 12290
66" Working Width
Chain Drive but Without Motor

DRY TIGER — Item 13214
3 Cylinder. Complete with cylinders and fancies, motors and starting equipment for cylinder and exhaust hoods.

MISCELLANEOUS

1—4 ROLL MANGLE—BUTTERWORTH — Item 12582
For Dye Machines
66" Working Width
Rubber Rolls

9000—W-3 AUTOMATIC FILLING BOBBINS — Item 13584
10¼" O.A.—9¼" Barrel

30,000—W-3 AUTOMATIC FILLING BOBBINS — Item 13584
8" O.A.—7" Barrel

390 RED FIBER CASES — Item 12610
35" long x 17" wide x 32" high
These cases are well constructed with 4 runners on the bottom and inside metal handles at the top. All corners and top are reinforced metal with 1¼" strap iron.

3 THOMAS HALTON JACQUARD HEADS — Item B-HJ
600 Hooks—Double 300—3 Position
9" Lift—Would include Crank Lever Stand, and Side Pump Lever. But No Lingoes or Harness.

COLLINS & AIKMAN CORP.

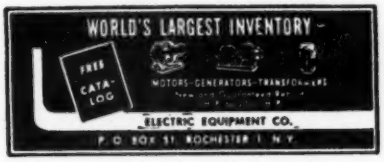
SALES & SALVAGE DIVISION

5th and Upland Avenue — PHONE CHESTER 3-4167 — Upland, Delaware Co., Pa.

Machinery and SUPPLIES FOR SALE

72—C&K 82" Verybest 25 Har. Automatic Looms, 550/60/3 Motors.
24—C&K 82" Intermediate 25 Har. Automatic Looms, 220/60/3 Motors.
12—C&K 82" H.W. 25 Har. 4 x 4 Looms, Drive Optional.
8—C&K 48" 20 Har., 5 Index Heavy 4 x 1 Automatic Looms, 220/60/3 Motors.
1—Sargeant 8" Duster No. 363—1945, V-Belt Drive.
1—Schofield 48" Automatic Duster—Rebuilt.
1—Sargeant 2 Cyl. 48" Wool Opener, V-Belt. Rebuilt.
1—48" Ball Bearing 2 Cyl. Opener. Rebuilt.
1—42" Bal Bearing Finishing Picker. Rebuilt.
5—48" All Ball Bearing Automatic Picker Feeds, M.D. with Reeves No. 00 and 220/440-60-2 Motors.
1—Smith and Furbush 42" Shredder. V-Belt. Rebuilt.
1—D&F Iron Two Cylinder Card, Broadband Feed, 24" Doffers, Triple Apron Condenser.
1—Whitin Three Cylinder 48" x 50" Iron Woolen Card, Broad-Band Feed, Whitin Tape Condenser, 96 Ends.
1—Duseberg-Bossom 48" Broadband Feed—Like New.
2—Whitin Cashike Tape Condensers, 60"—96 Ends.
5—D&F 60" Triple Apron Condensers.
7—Whitin 180 Sp. Model A. Spinning Frames 2½ to 3" Ring, 7½ h.p. 220/60/3.
1—Hygrolit Machine No. 11AY. Like New.
1—Fletcher Model E 60" Hydroextractor, 10 h.p. Slip Ring 220/60/2 with Control.
1—Rodney Hunt Express Fulling Mill, 20 h.p. 220/60/3 Motor Rebuilt.
3—P&W 66" Model A Double Shears.
1—Woonsocket 80" 20 Roll D.A. Napper. Ball Bearing, M.D. 220/440/60/3.
1—Woonsocket 80" 36 Roll D. A. Napper, M.D. American Gear Reducer and 550/60/3 Motor.
3—D. Gessner 66" Double Bed "Jumbo" Presses, M.D. Rebuilt.
1—Voelker 86" Double Bed Press, M.D. Rebuilt.
1—36" Mixing Picker Spencer Oiler and Automatic Feed.
1—Schofield Ball Bearing Rag Picker with Motor.
1—Cidegea Loom.

JOHN J. McCLOSKEY, Inc.
Collingswood, N. J. — Phone 5-0305



BUY WITH CONFIDENCE IN 1953

1—Hunter Lapper, 60", B.B. two Aprons.
1—V.V. 3-roll 52". Ball Bearing Calendar.
20—Jumbo Double Deck Twisters, 5½" spacing.
1—Sargeant 2-Bowl Scouring Unit, 60".
1—Giles 56-stick Skein Dyer, Monel Tank.
1—P&S Uxbridge 72" Inspection Machine.
5—V.V. 60" Al S.S. Dye Jiggs, M.D.
1—Double Knife Coater, 70", Controls, M.D.
30—Draper XD 46" Looms, Ind. M.D.
1—Werner 2-roll 60" Microset Dye Padder.

We Buy From Single Items To Complete Plants.

OUR 36th YEAR — CONSOLIDATED PRODUCTS CO. INC.
13-16 PARK ROW N.Y. 38 N.Y. BArclay 7-0600

BIALEK'S BEST BUYS

46" Draper "XD," 1950
Abbott Quillers, 1950-1
Cocker Warper, Creel, 1948
Terrell Stripper, Conveyor
Johnson Slashers
101" Sipp Hi-Speed Warper, 1000-end Creel
64" 4x4 C&K Looms
56" S-3, 2x1 Auto.
44" Draper "XK"
Bahnson Humidifiers
Complete Plants
Royle Card Cutting
60" C-5 Looms

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK CITY
LONGACRE 3-4978

396 STRAIGHT ST.
PATERSON, N. J.
LAMBERT 3-5886

LIQUIDATION SALE

MODERN PRINTING & FINISHING MACHINERY

2—50", 8 color, Rice, Barton & Fales Printing Machines.
1—46", 8 color, Rice, Barton & Fales Printing Machine.
1—50", 10 color, Rice, Barton & Fales Printing Machine.
1—64", 4 color, Textile Printing Machine.
1—50", Van Vlaanderen 3 roll Padding Machine, with 8—50" Drying Cans.
2—60", 18' Cast Iron Vat Agers.
2—54", 18' Cast Iron Vat Agers.
1—76" Polishing Lathe.
1—100 Gal. Steam Jacketed Mixing Kettle.
4—½ H.P. Gearhead Motor Mixers.
1—40"x60" Van Vlaanderen Tenter Frame.
1—48", Haring & Stevens Self-balancing Extractor.
1—54", Scutcher, with L-4 Nash Pump & Motor.
1—60"x60", Van Vlaanderen Tenter Frame.
1—40"x60", Morrison Machine Co. Tenter Frame.
1—64" Van Vlaanderen Palmer.
1—50" Van Vlaanderen 2 roll Quetch.
1—54" Van Vlaanderen Decating Machine, with L-4 Nash Pump & Motor.
1—60" Van Vlaanderen 3 roll Calender, 2 paper & 1 steel.
2—75 H. P. Reliance A.C.D.C. Generator Set.
1—Standard Print Washer.
1—8'x8'x30' long Cottage Steamer.
1—National Dry Box, 9 fan, 40' long, 86" Revolving Sticks.

1,000 COPPER ROLLERS

SHerwood 2-7666 SHerwood 2-7667
Moe Blank
DOMESTIC EXPORT
TEXTILE MACHINERY
523-525 E. 18th ST. PATERSON 4, N. J.

FOR SALE
MACHINERY and EQUIPMENT
of
ONEIDA BLEACHERY
NEW YORK MILLS, (NEAR UTICA) NEW YORK
WRITE FOR DESCRIPTIVE CATALOG

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

FOR SALE

SARGENT WOOL SCOURING BOWLS—Train of 5—36" in excellent running order with sectional rubber rolls. Last bowl lined with special impervious material for bleaching and carbonizing equipped with pumps and separate gear motor drives for rakes and squeeze rolls.

3—48" Sargent Wool Scouring Bowls also in first class running order.

1 Philadelphia stock dryer 67' long x 10'6" wide with 6' woven wire conveyor complete with feeder.

FRED WHITAKER COMPANY
RIDGE AVE. & SCOTT'S LANE
PHILADELPHIA, 29, PA.
GE 8-6100

FOR SALE

1 J & B mule
(1926)

360 Spindles 2⅛ gauge.

Can be seen in operation at:

MAANEXIT SPINNING CO.
Webster, Massachusetts

If there is anything you want—

or something you don't want that other readers of this paper can supply—or use—advertise it in

SEARCHLIGHT SECTION

CLASSIFIED ADVERTISING DIVISION

(*Continued from page 290*)

cause excessive breakage, and so make lint and waste on the traveler.

Corrective Action

The summary of the analysis sheet points out some obviously mechanical defects in the equipment. For highest efficiency, the equipment has to be in top condition. However, under the pressure of production, things are let slide; in fact, the commonplace is seldom recognized until its importance is brought out by a study that pinpoints the trouble and tells you how much of your total trouble is caused by this so-called little item.

Breaks at Roller. This category is swelled by observer inefficiency in not noticing the original cause of the break and catching it only when it has started to lap on the roll. However, repeated offenders should be checked for mechanical faults, bad cover, nicks on roll, etc.

Breaks at the Pigtail. May be caused by too little tension on ends, spindle off center, rough spots, etc.

Tangled Ends. May require protective shields. There may be cross currents of air from windows; also, traveler might be too light, etc.

Drawing-Room Faults. Roving packages should be of uniform size and planned to run out at the doff. The drawing room should attempt to keep breaks at a minimum and quality as high as possible. A study will show how much spinning trouble is actually the drawing room's fault.

Ripped Bobbins. Attempting to get a larger package by building too large a bobbin results in the traveler catching the bobbin and cutting into it. The same thing will occur when the spindle is off center or vibrating. Breaks at the large diameter of the bobbin also are caused by these factors.

Broken Traveler. Caused by defective traveler, ring, lack of lubrication, slubs, or a combination of these or other causes.

Broken Bands. Periodic inspection and protective maintenance will help here.

End Runs Off Side of Roller. Off-center guide fingers will cause this trouble.

Some of the specific recommendations resulting from this study were:

1. Install full-length separators to prevent double spinning.
2. Center the spindle properly and make a proper-size bobbin to prevent the traveler from cutting the yarn.
3. Select the proper size of traveler for each yarn for the best spin.
4. Sweeten the blends that give inherently poor spins.

PRIVATE SALE - IMMEDIATE DELIVERY

MACHINERY—EQUIPMENT—SUPPLIES

Located in the 3 Plants of

DUNN WOOLEN COMPANY

Martinsburg, W. Va. — **Bunker Hill, W. Va.**

Now open for inspection and if you are considering Expanding, Modernizing or Replacing some worn out items the following partial list merits your careful consideration and inspection:

PICKING

3—D&F 48" Fearnaughts M.D.
1—D&F 48" Improved Burr Picker
1—Sargent 48" Multiplex Burr Picker
1—Schofield Carding Rag Picker M.D.
1—Schofield 48" Box Duster M.D.

DYE HOUSE

4—Morton 600-750# S.S. Pressure Type Raw Stock Dye Kettle Units
1—Morton 100# ditto
2—Morton 50# ditto
1—Cleveland Tramrail System with 3-Elec. Hoists
1—Sargent 8' x 8 section Raw Stock Drying Unit with Pit Feed, Squeeze Rolls etc. all M.D. 1948

CARDING (13-SETS)

4—D&F 3-cyl. 60x60 Cards. D.A. 120-end Tapes. M.D. 1944-6
1—D&F 3-cyl. 60x60 Card S.A. 120-end Tape. M.D. 1935
1—Whitin 3-cyl. 60x60 ditto 1935.
1—Each P&S and S&F 3-cyl. 60x60 ditto.
2—D&F 3-cyl. 60x54" dia. S.A. 120-end Tape. M.D.
1—each Whitin, P&S and S&F 3-cyl. 60x54 dia. ditto.

Every Card is of all iron construction, has sleeve brgs on W&S, Broadband Int Feeds, Motor Drives and Perattas.

SPINNING—SPOOLING—DRESSING

16—J&B 360x2" ga. Woolen Mules. M.D.
4—J&B 390x2" ga. ditto. 1933-5.
2—H-W Yarn Conditioners. 1945.
8—W.C.M.Co. 48"x48 End Mdl NS Dresser Spoolers. Reeves Drives.
4—Altemus 100" Pinless Dressing Reels M.D. Warp Compressors.

WEAVING

16—C&K 92" Mdl W3 Automatic Woolen Looms. L.O. 15201
44—C&K 92" Mdl W3 ditto. L.O.15119. Convertible.
250—M. 8¾" Autowool Filling Bobbins.

FINISHING

2—J. Hunter Mdl-25B Fulling Mills. M.D.
1—R. Hunt Express Fulling Mill. M.D.
3—J. Hunter Mdl-21 Fulling Mills. M.D.
2—R. Hunt 6' Clipper Cloth Washers. M.D.
3—J. Hunter 6' Cloth Washers. M.D.
1—J. Hunter 8' Cloth Washer. M.D.
1—American 48" Open Top Centrifugal Extractor. M.D.
5—D. Gessner 3-Contact Dble Cyl 66" Teasel Gigs.
1—Kenyon 48-74"x90 yd. cap. Return type Pin Tenter Cloth Dryer
1—Cloth Carbonizing Range. J. Hunter Scutcher, acid tank & squeeze Rolls. Kenyon 48-74" Dryer & Baker. M.D.
1—P&W 80"x24 Roll D.A. Napper. M.D.
1—D. Gessner 84"x18 Roll D.A. Napper. M.D.
1—C&M 84" Dblq & Tacking Mch. Range. M.D.
4—P&W 66" Power Inspection Perches. Floor type. Variable speed drives. Ser. #9292-3-4-5. 2—with Trumeter Measuring Devices.
1—C&M 66" Dble Cyl Steam Brush. M.D.
1—Gessner Full Decater. 2—Cooling Frames. 2—Winding Frames. Pumps, Motors, etc.
1—Toledo Mdl.-9612D x 180 Lbs. Cap. Cloth Scale. Ser. 758329.

MISCELLANEOUS

1—Worthington 9x9 Air Compressor #L51017. M.D. 30 H.P.
1—Barrett-Cravens 500# Portable Stacker. M.D.
500—Fluorescent 2-tube (40W) Mill Fixtures.
3—MacBeth Mdl-BX 866 Color Matching Units.
1—Scott Mdl. J2 Cloth Tester. M.D.

SPECIAL NOTES

This is only a partial listing and included are many more items of machinery plus all the equipment, parts, supplies, oils, greases, trucks etc. necessary to operate, and usually found in, a 13 Set 60 Loom Woolen Unit. Many hundreds of thousands of dollars have been spent modernizing in recent years.

Address all mail and telegraph inquiries to

FRANK G. W. McKITTRICK CO.

78 FLETCHER STREET — Address telephone inquiries (Lowell 6391) to Vernon R. McKittrick—Used Textile Machinery Dealers. — **LOWELL, MASS.**

Immediate Delivery

Heddle Frames for Sale

For 14" Heddles

350—88" long (Wood Re. end)
200—84" long (Wood Re. end)
100—82" long (Wood Re. end)
100—79" long Double Metal End
555—70" long Double Metal End
200—70" long (Wood Re. End-Float Hooks)

For 13" Heddles

375—70" Artex
2075—49" Artex
125—46" Artex
375—45" Artex

Misc.

450M—Flat Steel Heddles, 14"
100 New Southern Shuttles, 17½ l. 2" w. 1¼" h.
1M—Fiber Roving Cans 12 x 36—Seamed and Seamless

L. J. McCaffrey & Son, Inc.

Box 495 — Est. 1920
Pawt., R. I. — Tel: Pa. 3-1314

MILLER MACHINERY CO.

66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies

BOUGHT AND SOLD

Warpers • Winders • Quillers

Looms

FOR SALE

LATE MODEL DYEING and FINISHING EQUIPMENT

IMMEDIATELY AVAILABLE

LOCATED at LINCOLN BLEACHERY and DYE WORKS, LONSDALE, R. I.

1—70" Morrison Pneumatic 3-Bowl Silk Calender 1948 Model—Motor Driven
1—72" David Gessner — Semi-Decator equipped with 50" Blanket—Nash Hytor Pump—Motor Driven
1—60' Van Vlaanderen Straightaway Tenter Frame Opening to 60"—Motor Driven thru Reeves Drive
8—70" Morrison Stainless Steel Dye Jigs —Individually Motor Driven—4—Totally Enclosed
10—Riggs & Lombard Stainless Steel Dye Becks—Motor Driven—1948 Model 2—20'; 4—16'; 2—14'; 2—12'
1—72" Birch Bros. Vacuum Scutcher—Motor Driven 1947 Model with Nash Hytor Vacuum Pump and Motor
1—Worthington All-Speed Detacker—Motor Driven 1950 Model
1—70"—2 Roll Padder—Rubber Covered Rolls — Stainless Steel Tank — Motor Driven
1—70" Van Vlaanderen Pre-Setting Unit with 7 Stainless Steel Cylinders—45" Diam. all B.B. Motor Driven 1948 Model
1—Van Vlaanderen 2-Box Boil-Off Unit Dim. 20'-Long x 20'6" Wide Overall Motor Driven thru Reeves Drive with Automatic Controls 1948 Model
1—Birch Bros. Doubling and Tacking Machine—Motor Driven 1950 Model

FOR FURTHER INFORMATION

WRITE—WIRE—PHONE

CRESCENT CORPORATION

TEXTILE MACHINERY—MILL SUPPLIES

1450 Broadway
New York 18, N. Y.
Tel. Lack 4-0700

397 Bay Street
Fall River, Mass.
Tel. 7-9421

Spartanburg, S. C.
P. O. Box 1591
Tel. 5624

HOSIERY MACHINES

used and rebuilt

KNITTERS—RIBBERS—LOOPERS—
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

FOR SALE

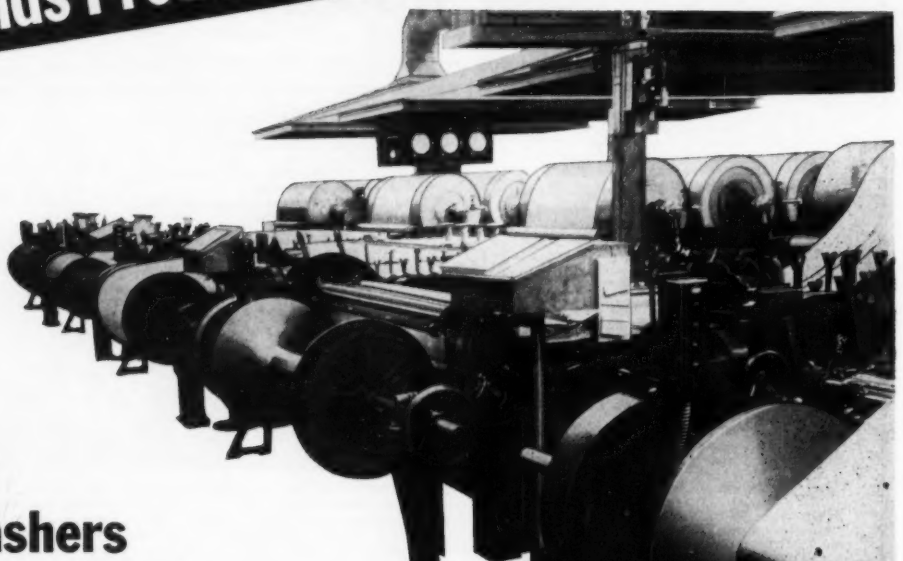
MAGAZINE CREEL

late model McBride

Cone or tube, 352 ends, individual stop motion, Cocker ball warper, counter, motor with Reeves drive and brake. Reply to

FS-6754, Textile World
330 W. 42nd Street, New York 36, N. Y.

1200 Pounds Production Per Hour



Battery of Cocker Slashers in a Southern Mill

These Cocker Slashers have several exclusive features which make them far superior to other machines. These are:

1. Differential Friction Compensating Control, which allows continuous high speeds without heating of Friction. This, combined with heavy construction which minimizes vibration, enables them to out-produce other type slashers.

2. The New Cocker Friction, which produces hard beams and gives 20% to 25% more yarn per loom beam.

Cocker Slashers have all of the other features required for fast and accurately controlled production . . . among which are graduated drives which permit changes in speed without overrun of beams or strain or jerk on the yarn, push-button control throughout, and finger-tip tension control.

Cocker Slashers are made with 7, 9, and 11 Cylinders and are unexcelled for cotton, spuns, filaments, and other type yarns. Write or wire for full information.

THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. The reader will find that this unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a surprisingly complete source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

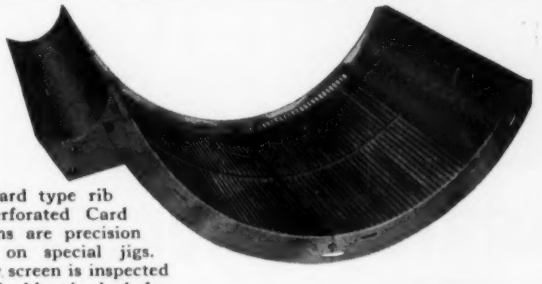
A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting, and Winding Equipment and Supplies

An * indicates additional data in the 1952-53 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Akron Spool & Mfg. Co.	284	R
Aldon Spinning Mills	281	G
Alemite Div., Stewart-Warner Corp.	144	M
*Alien Beam Co.	298	R
*Allis-Chalmers Mfg. Co.	61	F Q
American Air Filter Co., Inc.	196	A
American Blower Corp.	70	A
American Crayon Co.	272	F L R
American & Efird Mills, Inc.	275	G
*American Lava Corp.	165	L RT
American Lumber & Treating Co.	204	B
*American Moistening Co.	8	A
*American Monorail Co.	58	D P
American Viscose Corp. (Yarns)	191	G
*Appleton Machine Co.	54	E
Armstrong Cork Co.	46-47	T
Arnold, Hoffman & Co.	35	C
*Atkinson, Haserick & Co.	20 to 23	T
Atlantic Chemical Corp.	225	C
Atlantic Rayon Corp.	238	G
Atlantic Steel Co.	226	O
*Bachmann Uxbridge Wstd. Corp.	26-27	R
Bahnson Co.	203	A
Baldwin-Duckworth Div. of Chain Belt Co.	256	Q
*Barber-Colman Co., Textile Div.	271	R
Barnes Textile Associates, Inc.	270	N
Bausch & Lomb Optical Co.	234	N
*Becco Sales Corp.	175	C
Bemis Bro. Bag Co.	102	P
Benjamin Electric Mfg. Co.	73	F
*Bersworth Chemical Co.	259	C
*Blickman, Inc., S.	264	E
Boger & Crawford	183	G
*Booth Co., Beniamin	163	T
*Brinton Co., H.	223	L
Bristol Co.	267	K
Brush Electronics Co.	25	K
Bryant Chemical Corp.	140	C
Buffalo Electro-Chemical Co.	175	C
*Buffalo Forge Co.	269	A
*Butterworth & Sons Co., H. W.	132	E
Calco Chemical Div., American Cyanamid Co.	195	C

MORE PRODUCTION AT LOWER COSTS with GASTONIA TEXTILE SHEET METAL PARTS

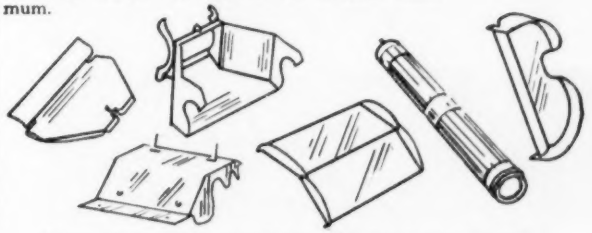
The quality and the profit of your end product starts at the beginning—where preparatory machinery must be geared for efficient, economical volume production. That's our job—a job for specialists with the reputation for top quality products, painstaking workmanship and reliable service.



Standard type rib or perforated Card Screens are precision built on special jigs. Every screen is inspected and double checked for accuracy and tolerance.

Picker, Condenser and Waste Machine Screens of maximum strength and durability are constructed of the best materials available.

New and rebuilt Cylinders are dynamically balanced to reduce vibration to an absolute minimum.

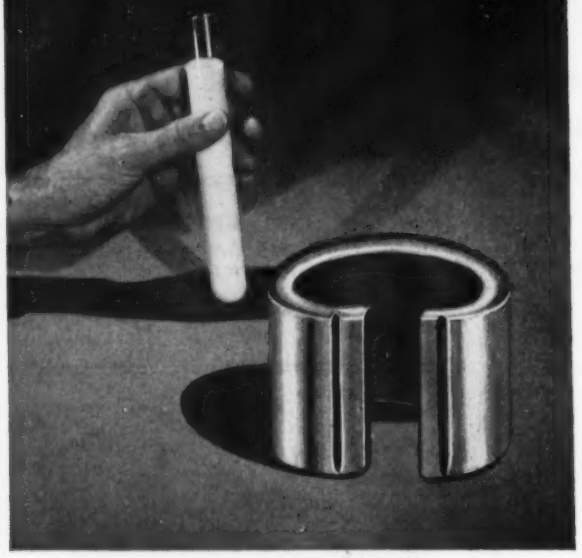


Years of practical experience—the finest of raw materials—and precision machinery in the hands of skilled workmen go into every product.

GASTONIA TEXTILE SHEET METAL WORKS, INC.
GASTONIA, NORTH CAROLINA

A SHEET METAL WORKS SERVING TEXTILE MILLS

KEEPING PACE



CARTER TRAVELERS

A modern, metallurgical laboratory plays an important part in the maintenance of the absolute uniformity of the weight, temper and shape of CARTER TRAVELERS. These same technicians are constantly at work improving CARTER TRAVELERS to meet the demands of higher spindle speeds and new fibres.

You can depend on CARTER TRAVELERS keeping pace with every new development in the textile field.

CARTER TRAVELER COMPANY
DIVISION OF
A. B. CARTER, INC.
GASTONIA N. C.

REPRESENTATIVES

R. A. Haynes, Special Representative	114 W. Fifth Ave., Gastonia, N. C.
W. L. Rankin	501 S. Chester St. Gastonia, N. C.
P. L. Piercy	128 Hudson St. Spartanburg, S. C.
J. R. Richie	3014 Lewis Farm Road, Raleigh, N. C.
J. W. Brown	P. O. Box No. 560, LaGrange, Ga.
J. K. Davis	P. O. Box No. 129, Auburn, Ala.
C. E. Herrick	44 Franklin St., Providence, R. I.
Hugh Williams & Co.	47 Colborne St., Toronto 1 ,Canada

*Caldwell Co., W. E.	285	B E
Carpenter Steel Co., Alloy Tube Div.	64	H O
*Carter Traveler Co., Div. of Carter Inc., A. B.	296	T
Celanese Corp. of America, Chemical Div.	229	C
Yarn Div.	48-49	G
Century Electric Co.	32	F
*Chicago Pneumatic Tool Co.	265	H
Cities Service Oil Co.	181	M
Clark Equipment Co., Industrial Truck Div.	215	P
Clark Mfg. Co.	184	H
Cleveland Worm & Gear Co., The	75	Q
C-O-Two Fire Equipment Co.	247	B
*Cocker Machine & Fdry Co.	294	R
*Cole Mfg. Co., R. D.	234	B E
*Coleman Co., Inc.	276	T
Colton Chemical Co., The	244	C
Columbia-Southern Chem. Corp.	82	C
Commercial Factors Corp.	2nd Cover	N P T
*Continental-Diamond Fibre Co.	250	
*Cook-P & N Machine Co., Inc.	142	E
Courtaulds Inc.	213a	G
*Crane Co.	60	H
Crane Mfg. Co.	244	I
*Crompton & Knowles Loom Wks.	13	R
Crucible Steel Co.	51	O
Custom Scientific Instrument Co.	283	K
Cutler-Hammer, Inc.	69	F
Dana Warp Mills	281	G
*Darnell Corp., Ltd.	218	P
*Dary Ring Traveler Co.	252	T
Dayton Rubber Co., The	30-31	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	37	T
*Dinsmore Mfg. Co.	253	E
Dixie Leather Corp.	136	R
Dodge Mfg. Corp.	249	Q
*Dommerich & Co., Inc., L. F.	18	N
Dow Chemical Co.	171	C
*Dow Corning Corp.	237	C
*Draper Corporation	1, 153	RT
*duPont de Nemours & Co., Dyestuff Dept.	71	C
Electrochemical Dept.	241	C
Textile Fiber Dept.	167	G
Edroy Products Co.	272	N
Eisenberg Fibers, Inc.	253	G
Engineered Plastics, Inc.	198	T
*Eriez Mfg. Co.	222	T
Falls Yarn Mills	240	G
Federal Fibre Corp.	246	P
*Fidelity Machine Co.	236	T
*Finnell System, Inc.	14	D
Fiske Bros. Refining Co., Lubriplate Div.	260	M
*Foster Machine Co.	36	T
*Fuller Brush Co.	273	B
Gair Co., Inc., Robt.	155	P
*Garland Mfg. Co.	179	R
*Gaston County Dyeing Mach. Co.	28	E
Gastonia Textile Sheet Metal Wks., Inc.	295	T
Gates Rubber Co.	24	Q
General Chemical Div., Allied Chem. & Dye Corp.	187	C
General Dyestuff Corp.	53	C
*General Electric Co.	84, 213b	F
*Gessner Co., David	279	E
Goodrich Chemical Co., B. F.	190	C
Goodyear Tire & Rubber Co.	9	Q
Graton & Knight Co.	136	R
Guardian Chemical Co.	242	C
Gulf Oil Corp.—Gulf Refining Co.	59	M
Hartford Machine Screw Co.	157	T
*Harwood & Son, Geo. S.	236	T
*Haskell-Dawes Machine Co., Inc.	242	T
*Hayes Industries, Inc.	72	R
*Hayssen Mfg. Co.	214	P
*Heim Co.	34	R
Heineman Corp., O., Div. of Aetna Industrial Corp.	278	G
Hermas Machine Co.	246	E
*Heyden Chemical Corp.	185	C
Hinde & Dauch Paper Co.	188	P
*Howard Bros. Mfg. Co.	33	T
Hunt Loom & Mach. Wks., Inc.	251	Q
*Huyck & Sons, F. C.	270	E
Hyatt Bearings Div., General Motors Corp.	211	O Q
*Ideal Machine Shops, Inc.	245	T
Industrial Rayon Corp.	83	G
Industrie-Werke Karlsruhe	297	E
*Ingersoll-Rand Co.	15	H
*Ives Co., L. T.	258	I

| | | |

PROVED BY
TIME
IMPROVED BY
RESEARCH

GENUINE
ALLEN
WARPER BEAMS
AND
BEAM HEADS

Products of 35 years of Know-how, plus constant research.

Different makes of wooden beams may look pretty much alike, but some serve their purpose better than others. Allen know-how, plus constant research, produces the world's best beams, as attested by overwhelming mill preference.

RESILIENT, UNBREAKABLE HEADS

Allen wooden warper beam heads are superior in use because they will spring without taking a set. Laboratory deflection tests up to 15 tons leave these heads unaffected. We are constantly working to improve our heads. The results do not show to the eye, but they do show up in operation, in longer beam life and yarn protected from damage.

NEW BARRELS FOR SYNTHETIC YARNS

Extensive research has enabled us to develop beam barrels that withstand the pressures of the new synthetic yarns. Warps are built uniformly with no soft cores, and no trapping of yarn at heads.

ALLEN BEAMS Withstand the Ravages of Shipping . . . Protect Yarn, Save Dollars.

ALLEN
BEAM COMPANY
High Speed Warper Beams
Warper Beam Heads
Loom Beams
Adjustable Loom Beam Heads

General Offices — 151 River Road
New Bedford, Mass.
Representatives in all Textile Localities
and all Principal Countries of the World.

"GOOD WARPS ARE MADE ON GOOD BEAMS"

*Sonoco Products Co.	147	T
Southern States Equipment Corp.	193	T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	254-255	R
Specialty Hardwoods, Inc.	276	T
Square D Co.	173	F
*Standard Pressed Steel Co.	259, 276	O
Stanley Works, The	197	B, P
*Steel Heddle Mfg. Co.	254-255	R
*Stop-Motion Devices Corp.	275	L
Sun Oil Company	130	C
Superior Combustion Industries, Inc.	274	Q
*Supreme Knitting Mach. Co., Inc.	227	L
Sylvania Electric Prod. Co.	239	F
Taylor Instrument Cos.	169	K
Taylor-Stiles & Co.	232	T
Tennant Co., G. H.	208	B
Texas Co., The	4th Cover	M
Textile Banking Co.	199	N
*Textile Machine Works	88, 149	L
Thomson Industries, Inc.	253	Q
Tide Water Associated Oil Co.	74	M
*Tompkins Bros. Co.	206	L
Torrington Co., The (Needles)	39	I
Torrington Co., The (Bearings)	205	O, Q
Turbo Machine Co.	5	L
*Twin Disc Clutch Co.	216	Q
*US Bobbin & Shuttle Co.	44-45	T
U. S. Instrument Corp.	230	K
U. S. Rubber Co., Mechanical Goods Div.	243	T
*Universal Winding Co.	160	T
Utica Novelty & Mill Spec. Co.	280	E
*Van Vlaanderen Machine Co.	257	F
*Veeder-Root, Inc.	134	K
Victor Chemical Works	10	C
Virginia-Carolina Chemical Corp. Fiber Div.	209	G
Virginia Electric & Power Co.	212	N
WAK Industries	280	K
*Warner & Swasey Co.	40-41	R
Warwick Chemical Co.	139	C
*Wayne Mfg. Co.	242	T
Westinghouse Electric Corp., Lamp Div.	219	F
Micarta Div.	76-77	O
Motors & Controls	62-63	F
Sturtevant Div.	80	A
West Point Fdry. & Mach. Co.	68	R
Whitehead Engineering Co.	240	T
*Whitin Machine Wks	67	T
Wildman Mfg. Co.	235	L
*Winsor & Jerauld Mfg. Co.	138	E
Wood's Sons Co., T. B.	281	Q

PROFESSIONAL SERVICES

Barnes Textile Associates	270
Eaton & Bell	286
Kuljian Corp.	228
Lockwood Greene Engineers, Inc.	16
Loper & Co., R. E.	283
Sirrine Co., J. E.	Third Cover

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

EMPLOYMENT

Positions Vacant	286
Selling Opportunities Offered	286
Positions Wanted	286
Selling Opportunities Wanted	286
Employment Services	286

SPECIAL SERVICES

Contract Work	286

BUSINESS OPPORTUNITIES

Offered	286

EQUIPMENT

(Used or Surplus New) For Sale	287-293

WANTED

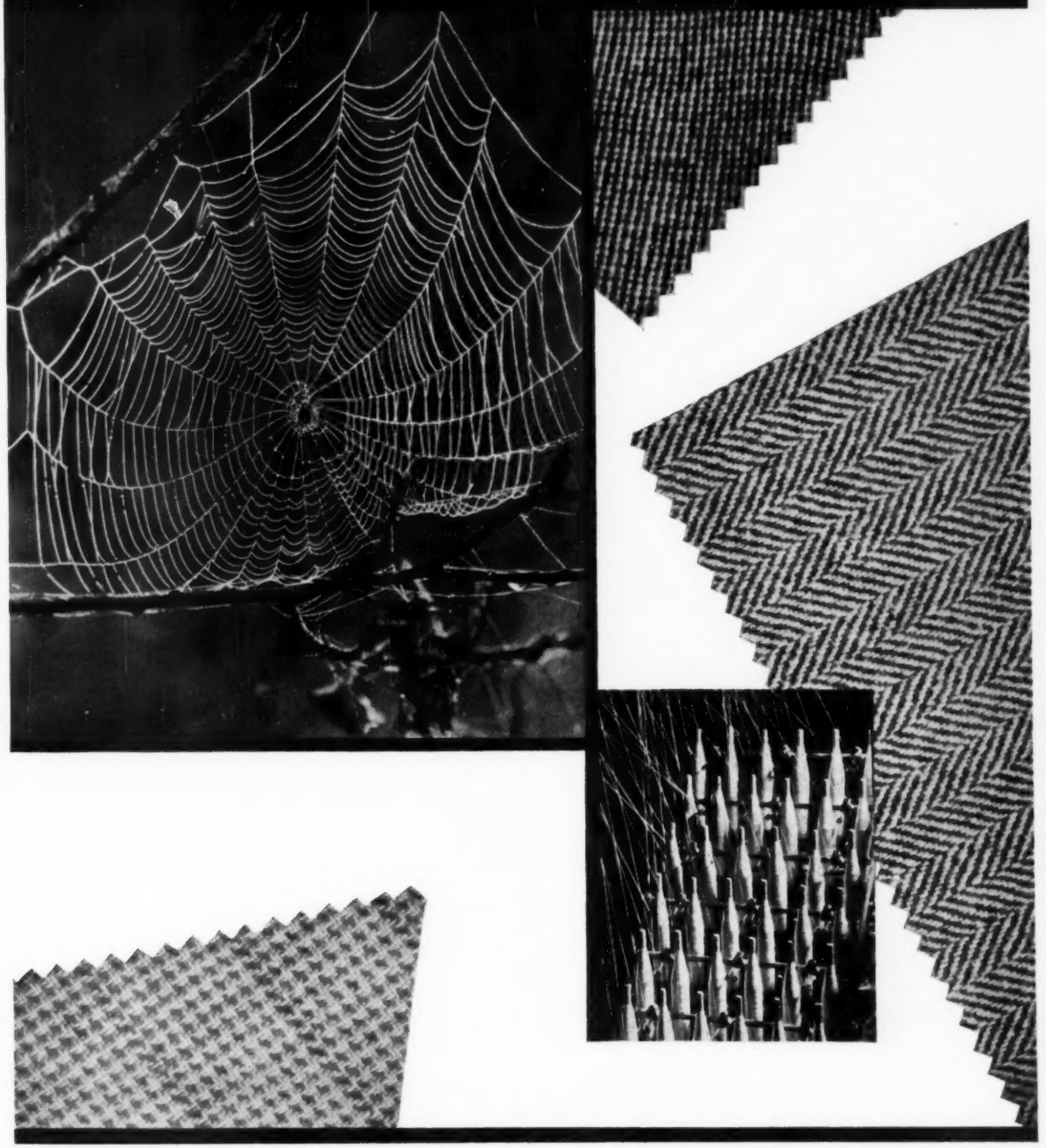
Equipment	286, 289

ADVERTISERS INDEX

A B C Personnel Inc.	286
Bialek & Co., Theodore	291
Blank Co., Inc., A. & M.	289
Blank, Moe	292
Bresani, Joseph	293
Carolina Converting Mills	289
Collins & Aikman Corp	291
Consolidated Products Co., Inc.	291
Crescent Corp.	293
Doyle & Miller	289
Electric Equipment Co	291
Fitzgerald, James F.	292
Gaines Textile Machinery Co., Inc.	290
Industrial Products of America	288
Maanexit Spinning Co	292
McCaffrey & Son, Inc	293
McCloskey Inc., John J.	291
McDowell Associates Inc.	289
McKittrick Co., Frank C.	293
Miller Machinery Co.	293
New England Products Co.	286
Pennsylvania Spool & Equipment Co.	288
Rabinowitz & Sons, Wm.	287
Raymond Service Inc., Chas. P.	286
Republic Textile Equipment Co.	288
Stave & Kessler	290
Textile Auxilaries	292
Wheeler Company, Frank W.	290
Whitaker Company, Fred	292

A BASIC ENGINEERING PRINCIPLE . . .

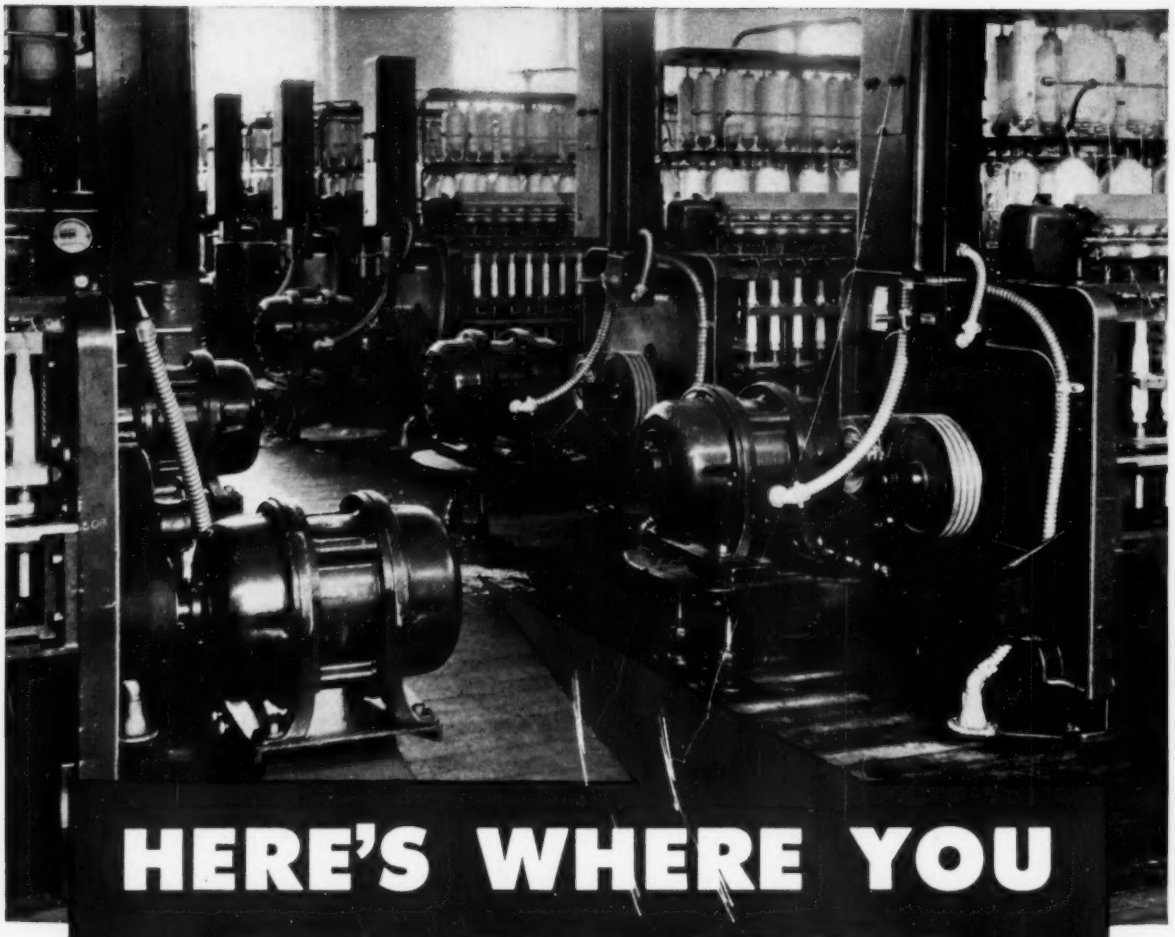
THE PROPER DESIGN IN THE RIGHT LOCATION



Engineers for 51 Years . . . J. E. SIRRINE COMPANY

GREENVILLE • SOUTH CAROLINA

A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING BUSINESS, COMMERCE AND INDUSTRY



HERE'S WHERE YOU CAN CUT COSTS

HERE'S HOW you can do it: Use *Texaco Regal Starfak* in your high-speed, grease-lubricated ball and roller bearings. You'll reduce: 1) your maintenance costs; 2) your power costs; and 3) your lubrication costs.

Premium-quality *Texaco Regal Starfak* is way ahead of ordinary grease. It has greater oxidation resistance. It won't form gum, nor will it separate. *Texaco Regal Starfak* stays *in* the bearings, giving top protection under the toughest working conditions. Naturally, bearings last longer . . . maintenance costs come down.

In addition, *Texaco Regal Starfak* minimizes "drag" in starting and running. Power consumption is bound to be less. And *Texaco Regal Starfak's* longer lasting protection means fewer applications . . . less lubrication expense.

There are Texaco Lubricants for all textile machines. Let a Texaco Lubrication Engineer show you how they can cut your costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE, on television Tuesday nights. METROPOLITAN OPERA radio broadcasts Saturday afternoons.